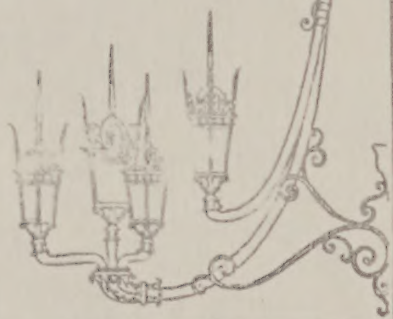


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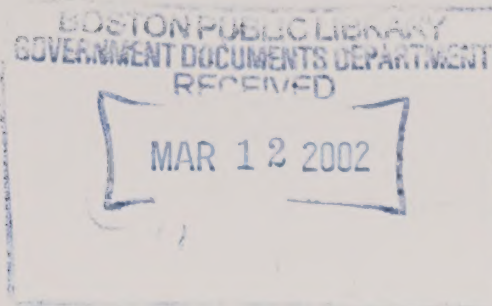


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City of Boston Town of Brookline

Phase 1 Muddy River Flood Control, Water Quality and Habitat Enhancement, and Historic Preservation Project

Volume 7

Appendix J ETM Associates, L.L.C. - Draft Maintenance Plan

Appendix K Comments and Responses

Appendix L Regulatory and Agency Correspondence

December 2001

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Appendices

Appendix J

DRAFT
MAINTENANCE PLAN FOR
THE EMERALD NECKLACE-MUDDY RIVER PARK
MUDDY RIVER RESTORATION PROJECT

APPENDIX J

ETM Associates, L.L.C. – Draft Maintenance Plan

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31 DECEMBER 2001

DRAFT MAINTENANCE PLAN FOR THE EMERALD NECKLACE-MUDDY RIVER PARKS MUDDY RIVER RESTORATION PROJECT



CITY OF BOSTON PARKS AND RECREATION

TOWN OF BROOKLINE PARKS AND OPEN SPACE DIVISION

METROPOLITAN DISTRICT COMMISSION

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Table of Contents

1. Introduction	1
2. Current Park Maintenance Responsibilities	2
3. Classification of Physical Areas in the Emerald Necklace-Muddy River Parks	4
4. Defining Maintenance Work	5
5. Relationship Between Usage and Maintenance	5
6. Measuring Workload	6
7. Measuring Current Work	6
8. Measuring Current Productive Time	8
9. Current Maintenance Work	9
10. Setting Higher Maintenance Standards	11
11. Park Standards	12
12. Impact of Capital Projects	14
13. The Gap Between Needed Hours and Available Hours	16
14. Higher Maintenance Guidelines	18
15. Management Recommendations	34
16. Maintenance Recommendations	37
17. Implementation Recommendations	41
18. Strategies for Closing the Gap	44

I. Introduction

The Emerald Necklace was conceived and designed as a chain of green spaces extending from Boston Common to Franklin Park. The focus of this study is that portion of the Emerald Necklace adjacent to the Muddy River from Ward's Pond to Charlesgate, called the Muddy River Parks of the Emerald Necklace. The total study area is approximately 184 acres of which 42 acres are water.

The park system called the Emerald Necklace, which runs through Boston and Brookline, appears to be a natural landscape. However, these green spaces, like Central Park, are far from natural. Constructed in the late 1890s, the Emerald Necklace took nearly twenty years to create and is recognized as one of Frederick Law Olmsted's finest works. The Emerald Necklace is a designated Boston landmark, and is also listed on the National Register of Historic Places.

Olmsted envisioned the park system as a common ground to which all people could come to escape the noise, pollution and overcrowding of nineteenth-century urban life. He created a path and parkway system to link the parks and the surrounding neighborhoods. He reshaped the existing landscape to enhance its picturesque qualities, planting densely with diverse species of trees and shrubs and adding a few carefully sited architectural features including bridges and other park structures. The parks in the Fens and along the Muddy River were designed to solve major drainage and engineering problems. The water bodies from Jamaica Pond to the Charles River are the most extensive and ambitious that Olmsted designed in any of his public parks.

Over the years, important links in the "necklace" have been obliterated, most notably by the intrusion of the Sears parking lot and the Route 9 Overpass. Other parts have suffered from neglect and lack of regular maintenance.

This study addresses the following areas of the Emerald Necklace:

The Muddy River Parks of the Emerald Necklace

The parks from Charlesgate to Wards Pond to include Charlesgate, Back Bay Fens, Riverway and Olmsted Park from curb to curb.

Muddy River Restoration Project

The park areas within the contract limit line of the Muddy River Restoration Project.

Both areas are shown on the maps that follow. See Figures 2.1 to 2.3.

Maintenance of the Muddy River Parks of the Emerald Necklace is divided among three primary entities:

- City of Boston maintains about 117 acres of which 28 acres are water;

**Draft Maintenance Plan for the Muddy River Parks of the Emerald Necklace
Muddy Rivers Restoration Project**

- The Town of Brookline maintains about 32 acres of which 7 acres are water;
- The Metropolitan District Commission maintains about 35 acres of which 7 acres are water;

Each of the entities is responsible for maintenance of its area. There is no single management entity responsible for coordinating or ensuring that ongoing maintenance is done to a specific set of standards or practices. In addition, funding for maintenance is the responsibility of each entity. As a result, different management objectives, maintenance standards, amount of resources, capital improvements and technical expertise are found throughout the Muddy River Parks of the Emerald Necklace. Options for an operating model for the Muddy River Parks of the Emerald Necklace is the task of a separate study done by Clarrisa Rowe of Brown and Rowe and are not included in this report.

While this report recognizes that different entities are responsible for maintenance of the park, we have attempted to view the park and its maintenance needs as a whole and not Boston's, Brookline's, or the MDC's responsibility.

2. Current Park Maintenance Responsibilities

The Boston Parks and Recreation Department, the Town of Brookline Parks and Open Space Division and the Metropolitan District Commission are responsible for maintenance in the Muddy River Parks of the Emerald Necklace. See Figures 1.1 to 1.3 for maps showing the park areas that each entity is responsible for.

Most of the current maintenance efforts consist of basic maintenance tasks such as delittering, emptying trash receptacles, mowing, some contract tree work and limited horticultural work.

Boston

The Boston Park and Recreation Department (BPRD) is responsible for the majority of the Muddy River Parks of the Emerald Necklace, approximately 117 acres of which 28 acres are water. Park maintenance throughout Boston is organized into 6 regions with Region 5 responsible for the Muddy River Parks of the Emerald Necklace. See organizational chart, Figure 4.1. In addition, the Parkman Crew, a specialized horticulture crew, does work in the Muddy River Parks of the Emerald Necklace as well as the Public Garden and other Parkman sites. Other specialty crews, such as the trades and the tree crew have city-wide responsibilities. The Parkman program funds some contract work in the Muddy Rivers Parks of the Emerald Necklace.

BPRD maintenance includes:

- Daily park maintenance – primarily cleaning and mowing
- Trades
- Horticulture
- Tree Maintenance

In addition, the Parks Department is responsible for 8 pedestrian and 1 vehicular park bridges. The City of Boston Public Works Department (BPWD) is responsible for 5 bridges (4 vehicular and, 1 pedestrian bridge).

Brookline

The Town of Brookline is responsible for approximately 32 acres of the Muddy River Parks of the Emerald Necklace of which 7 acres are water. The Brookline portion of the Emerald Necklace extends from the Riverway to Olmsted Park. The Park and Open Space Division is responsible for park maintenance and is part of the Department of Public Works. See organizational chart, Figure 4.2. Park maintenance is organized into 3 geographical zones (two of which are responsible for the Muddy River Parks of the Emerald Necklace), a town-wide ball field crew, horticulture and trash crew also do some work in the Muddy River Parks of the Emerald Necklace.

Brookline maintenance includes:

- Daily park maintenance – primarily cleaning and mowing
- Trades
- Horticulture
- Tree Maintenance

Brookline is also responsible for the Carlton Street footbridge.

Metropolitan District Commission (MDC)

The MDC is responsible for the Charlesgate area, the former Kelly rink site, the parkways, catch basins and a 25' strip within the park from the curb totaling approximately 35 acres of the Muddy River Parks of the Emerald Necklace of which 7 acres are water. The Charles District crews perform maintenance and are responsible for the area that includes the Esplanade, Charles River Basin, and the McGrath/O'Brien Highway. The MDC's portion of the Emerald Necklace is but a small portion of the Charles District crew's responsibilities.

MDC maintenance consists of mowing, from April-October on a 10-day mowing cycle, delittering and fall leaf removal from late October through mid-November.

Boston Art Commission (BAC)

The BAC is responsible for the monuments and statues in the park.

Massachusetts Highway Department (MHD)

The MHD is primarily responsible for roadways and 6 of the 24 bridges throughout the Muddy River Parks of the Emerald Necklace.

The Massachusetts Turnpike Authority (MTA)

The MTA is responsible for the I-90 Bridge and adjacent CSX Railroad bridge that crosses the Muddy River in the Charlesgate area.

3. Classification of Physical Areas in the Emerald Necklace-Muddy River Parks

Park Sectors

The Muddy River Parks of the Emerald Necklace has been divided into 7 sectors by ETM Associates for analysis and planning purposes – taking into account maintenance needs and the characteristics of the physical areas. See Table I.

The sectors for this study are listed below and shown on Figures 3.1 to 3.3:

Sector I	Charlesgate
Sector IIA	Back Bay Fens North: Victory Gardens/Mother’s Rest
Sector IIB	Back Bay Fens Central: Rose Garden/Clemente Field
Sector IIC	Back Bay Fens South and Sears Parking Lot
Sector III	Riverway
Sector IVA	Olmsted Park North: Leverett Pond/Daisy Pond
Sector IV B	Olmsted Park South: Wards Pond/Willow Pond/Nicholson Hill

Physical Areas

The physical areas in the Muddy River Parks of the Emerald Necklace can be divided into five categories

- a. **Natural Areas** – Open, natural areas, subdivided into:
 - Woodlands
 - Parkland
 - Planted Areas
 - Athletic Fields
- b. **Paved Areas** – Open to the elements, but covered by a man-made surface, including parking lots, playgrounds, paths, athletic court surfaces.
- c. **Structures** – Enclosed or partially enclosed areas (buildings, or shelters) or other man-made three-dimensional entities (monuments, bridges).
- d. **Park Furniture** – Drinking fountains, light standards, trashcans, and benches.
- e. **Water (Muddy River & water bodies)** – The Muddy River, lakes and streams.

Emerald Necklace Muddy River Parks						Muddy River Restoration Project					
Sectors	Total Area (sq. ft.)	Acres	Parkland	Water	Total Area (sq. ft.)	Acres	Parkland	Water			
I Charlesgate	668,506	15	13	2	225,835	5	3	2			
IIA Back Bay Fens North: Victory Gardens/Mother's Rest	1,047,918	24	18	6	544,000	13	6	6			
IIB Back Bay Fens Central: Rose Garden/Clemente Field	1,516,994	35	25	10	789,394	18	9	9			
IIIC Back Bay Fens South: and Sears Park	287,924	7	5	2	214,978	5	3	2			
III Riverway	1,427,553	31	23	7	750,539	17	10	7			
IVA Olmsted Park North: Leverett Pond/Daisy Field	2,075,898	48	38	11	781,982	18	7	11			
IVB Olmsted Park South: Wards Pond/Willow Pond/Nicholson Hill	1,031,220	24	20	4	174,240	4		4			
Total	8,056,013	184	142	42	3,480,968	80	38	42			

Table: I. ETM Sectors-Square Footage and Acreage

4. Defining Maintenance Work

Despite the complexity of measuring park maintenance work, the process is essential. It has been said that you can't manage if you can't measure, and you can't measure if you can't define. Currently there is no park-wide standard or systematic method for measuring work in the Muddy River Parks of the Emerald Necklace.

A good classification system lends itself to work measurement and the application of work standards; it supports management decision-making at all levels (e.g., in deploying personnel and equipment), and it is based on understanding the nature of park maintenance work.

Three critical variables condition the analysis of park maintenance work: 1) the nature of the task, 2) skill levels of those performing the task, and 3) the physical setting. For example, cleaning a paved surface is different from cleaning a densely wooded one, both in type of equipment used and in the time it takes per acre.

Maintenance tasks can be classified into five types:

General Maintenance – Work having to do with the appearance of the park and sanitary conditions, including litter pick-up and collection of trash from receptacles.

Horticultural Care - Work having to do with care of shrubs, perennials, small trees, turf care, mowing, pruning, woodland management, and tree care.

Repair and Preservation – Work having to do with the proper functioning and safety of park equipment and facilities, preventative maintenance, and repair, such as repair of park lighting, bench painting and repair, park structure maintenance, and graffiti removal.

Operations and Special Events – Work related to the use of park facilities and equipment. This is often seasonal or special event related, such as setting and removing barricades.

Water Body Management – Work related to maintaining the proper health of park water bodies including monitoring, cleaning, edge repair, and removal of invasive vegetation.

5. Relationship Between Usage and Maintenance

Park users not only greatly increase the time required to repair and maintain a park's physical setting, but also create a daily mess. Cleaning up after visitors, ranks far and above as the most time-consuming park task. Services to special park users, such as special events and organized recreational groups, also add a considerable amount of work, especially during the peak summer season.

In general, the greater the number of users in and around parks, the greater the amount of maintenance work that needs to be done. How long people stay and what they do when they get there is also important. Five busy vandals can create more work than 1,000 people strolling through a park.

Of course, maintenance also impacts use. If the parks are dirty, benches are broken, and ball fields are not playable or open, people won't enjoy the parks as much, and eventually may stop coming. If parks are well maintained, then more people will come.

Given this interdependence between maintenance and use, it is important that the parks "keep up" – that as the number of users continue to increase, the quality and quantity of maintenance must keep pace.

6. Measuring Workload

Measuring workload in a complex maintenance environment is far from simple. First, there are many different kinds of work measures: amount of work; quality of work; frequency; speed (amount of work per unit of time); and time to complete. The different work measures are inter-related – one can usually complete a task more quickly by compromising on the quality of work.

Outside or uncontrolled variables which affect workload and complicate work measurement: the impact of use such as the number of users and their behavior (e.g., vandalism, special events); the intensity of use (e.g., heavy use during large special events); the culture or style of the workplace; the physical conditions, such as terrain and weather; and the difficulty of the task itself and skill level possessed by the staff. Deferred maintenance, capital projects in process, and future capital projects all have an impact on workload. In the Muddy River Parks of the Emerald Necklace, the primary variables are the park's physical variations, the culture or style of the workplace and future capital projects.

7. Measuring Current Work

The process to measure current maintenance work involved interviews, observations, and information provided by the three municipalities. The following is an outline of the methods used.

- Interviews were conducted with senior managers and field staff of all three entities to elicit information on current staffing and operations
- Review of existing organizational charts and work schedules
- Site walks and park tours
- Interviews with members of the Citizens Advisory Committee
- Interviews with the Emerald Necklace Conservancy

Full time equivalents were developed to reflect the actual percentage of time maintenance staff spent in the Muddy River Parks of the Emerald Necklace.

**Draft Maintenance Plan for the Muddy River Parks of the Emerald Necklace
Muddy Rivers Restoration Project**

- BPRD: Region 5 crew of 4 spends approximately 80% of its time in the Muddy River Parks of the Emerald Necklace which equates to 3.2 FTEs, while the Parkman horticulture crew of 3 spends about 40% of its time or 1.2 FTEs. Boston maintenance staff is augmented by 1.1 FTE of supervisory support. The Director of Historic Parks (50%), Historic Park Landscape Architect (20%); Parkman Funds contract Project Manager (40%) also spend time on park-related issues.
- Town of Brookline; Two zone maintenance crews of 4 persons spends 15% of its time in the Muddy River Parks of the Emerald Necklace or 1.15 FTE, while Forestry spends .1 FTE, Brookline maintenance staff is augmented by .6 FTE supervisory support and Arborist (5%), Operations Manager (10%) and Landscape Architect (5%).
- MDC: MDC maintenance crew of 4 persons from the Charles District spends approximately 25% of its time in the Muddy River Parks of the Emerald Necklace, which equates to 1.0 FTE, which is supplemented with supervisory staff equal to .1 FTE.

The estimated current staffing in the Muddy River Parks of the Emerald Necklace by maintenance field staff and supervisors is shown below in Table 2.

Table 2. Current FTE's for Emerald Necklace – Muddy River Parks

Organization	Work Force	Managers/ Supervisors (FTE)*	Workers (FTE)*
Boston	M & O	.3	3.2
	Horticulture	.4	1.2
	Forestry	.1	.3
	Trades	.2	1.2
Brookline	M & O	.5	.75
	Horticulture	.25	.4
	Forestry	.25	.1
	Trades	.1	.25
MDC	M & O	.1	1
Total	10.6	2.2	8.4

*** FTE = Full Time Equivalent**

8. Measuring Current Productive Time

The answer to the question of how much time is available from a work force of 10.6 FTEs is developed below and summarized in Table 3.

- **Total Time**

The base unit for measuring potential productive work is the number of hours a person works a year. The total number of hours is the maximum someone can work, deducting weekends. For the Muddy River Parks of the Emerald Necklace that number results in 260 days per year, times 8 hours a day, times a staff of 10.6 (FTE), for a total of **22,048 hours**.

- **Off-the-Top Deductions**

The total represents only a starting point in calculating the work force's productive time. Workers are entitled to a certain number of holidays and vacation days, excused absences, emergency absences and time for breaks.

- **Lost Time**

No worker is constantly productive, nor is any organization perfectly efficient. Lost time includes sick leave, leave without pay, workers compensation, and Family Leave Act.

- **Non-Productive Time**

In addition, time is spent away from work for travel time, trips to the dump, change and wash up, and waiting time for vehicles or equipment.

- **Loss Time Due To Inclement Weather**

In times of inclement weather (rain and snow), there is little outside maintenance work a park worker can do.

- **Net Productive Time**

After all the deductions are subtracted (520) from the total time available (TTA), 2080, the net productive time (NPT) per worker is approximately 1,560 hours per year (2080 – 520 hrs). The estimated net productive time for existing park maintenance is:

10.6 F.T.E. x 1,560 hrs/year, which equals 16,536 net productive hours/year for maintenance work in the Muddy River Parks of the Emerald Necklace.

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Muddy Rivers Restoration Project**

- **Supplementary Available Hours**
 - Contract Work
 - Correction Department Workers
 - Boston Youth Fund (seasonal)
 - Parkman Contract Work
 - City Year and Volunteers – currently minimal
 - “Park Partners”

Based on staff interviews, it is estimated that the total supplementary work hours for the Muddy River Parks of the Emerald Necklace is 2,000 – 3,000 annually.

Table 3. Annual Net Productive Hours for Maintenance of the Muddy River Parks of the Emerald Necklace

Total Hours	
8.4 FTE field staff x 260 days/yr x 8 hrs/day	17,472
2.2 supervisory staff x 260 days/yr x 8 hours/day	4,576
Total Hours	22,048
Deductions (Estimated @ 25%)	
Off-The-Deductions	
Lost time	
Non-Productive Time	
Inclement weather	
Total Lost and Non-Productive Time	5,512
Total Net Productive Time	16,536

For the purposes of this report, all hours will be expressed as Net Productive Time.

9. Current Maintenance Work

Current maintenance standards vary throughout the Muddy River Parks of the Emerald Necklace. A site walk on August 4th, 2001 pointed out many areas of the park with different maintenance standards and practices:

- Many areas with little or no maintenance

**Draft Maintenance Plan for the Muddy River Parks of the Emerald Necklace
Muddy Rivers Restoration Project**

- Inconsistent mowing standards and practices
- Areas of erosion
- Different bench treatments
- Different trash containers
- Broken path edges
- Evidence of vehicles driving across lawns
- General lack of tree maintenance
- Different walkway materials
- A number of small landscape improvement projects that had been done by both Brookline and Boston over the past few years that had not done well due to a lack of ongoing maintenance
- Poor maintenance of recent landscape improvements due to the type of plant material selected
- Some graffiti, particularly on trash barrels

The inability to maintain newly improved areas is a serious cause for concern and points to the fact that existing resources can do little more than keep up with basic park maintenance. Additional maintenance resources will be needed to meet and sustain the workload from newly completed capital projects including the Muddy River Restoration Project, in particular.

While a cursory inspection indicates that existing park maintenance is basically acceptable, a closer look shows that many areas have been let go, the overall turf standards need improvement, extensive tree care is needed, horticultural care is lacking and there is little or no existing woodland management or water body maintenance efforts. In other words, only basic park maintenance, cleaning and mowing, and some limited tree work is currently being done. The lack of uniform standards and practices only serves to reinforce the fact that multiple entities have maintenance responsibilities.

It should be noted, that the new plantings near Leverett Pond in Brookline highlighted a serious current and future maintenance problem. The particular variety of rose, Memorial Rose, selected for the planting areas has serious maintenance implications. The Memorial rose is a very aggressive grower and quickly spreads beyond the boundaries of the planting area. In addition, access by maintenance staff is very difficult due to the dense spreading nature of the plant and its small thorns. The inability of the maintenance staff to “wade” into these planting beds to weed and remove litter results in no or little maintenance. In this particular instance, it is not so much an issue of staffing as much as it is the species of the plant material itself which makes maintenance very difficult, if not impossible. Plant material should be selected not only for its historic and environmental appropriateness, but also the ability of staff to maintain it.

Given the current staffing levels, it is not unexpected that little more than basic maintenance is done.

10. Setting Higher Maintenance Standards

The Muddy River Parks of the Emerald Necklace consist of different landscape types with different maintenance needs:

- Woodlands – natural areas characterized by the Ward's Pond area with less intense usage. These areas should be managed as woodlands requiring low levels of maintenance but need staff with specialized skills, particularly in urban forestry or woodland management
- Parkland – park areas characterized by grassland covered by a tree canopy. This is the predominate landscape type found in the Muddy River Parks of the Emerald Necklace and require intensive maintenance. Grass needs to be mowed and maintained on a regular schedule, litter picked up, and trees pruned and maintained.
- Planting Areas (shrubs and perennials) – these areas are characterized by plantings of ornamental shrubs and perennials. Understanding the character of these plantings will be important to performing proper maintenance practices. Some plantings will need regular pruning or trimming (hedges) while others will be allowed to grow with limited pruning to reach their desired height and character.
- Embankment Plantings – plantings along the water edge will need regular maintenance including removal of invasive plant species.
- Water – the Muddy River as well as the lakes and small streams will need monitoring, cleaning and removal of invasive vegetation
- Site Furnishings such as benches, trash cans, signs will need regular maintenance.

Park staff recognizes the need for higher maintenance standards. The following areas are priorities:

- Horticultural Care
Additional resources are needed to meet the horticultural needs of the park. Shrub plantings are in need of watering, weeding, pruning and fertilizing.
- Turf Maintenance
Higher standards of turf care including a recommended seven-day mowing schedule, reseeding, fertilizing, aeration, and soil testing are needed to ensure a high quality turf.
- Tree Care
The existing trees need of pruning, thinning and in some cases removal of dead or dying trees.

- **Woodland Management**
Additional specialized crews are needed for woodland management.
- **Water Body Management**
Specialized skills are needed to monitor and maintain water quality throughout the Muddy River Parks of the Emerald Necklace.
- **Erosion control**
As a mature landscape with considerable use, the Muddy River Parks of the Emerald Necklace suffers from numerous erosion problems. Controlling erosion saves work in the long run, by preventing the build up of silt in lakes, ponds, and the clogging of catch basin. It also significantly improves the appearance of the parks
- **Repair**
Park features, such as benches, trash cans, catch basins, soft surface paths—which are easy to overlook and make a second priority—need regular maintenance.

11. Park Standards

Setting higher maintenance standards entails more than articulating higher maintenance standard and calculating the amount of increased hours for maintenance. Proper management, staffing levels, training, and the right equipment are critical for achieving higher maintenance standards.

In interviews with park staff, site observation, and benchmarking standards developed by the National Recreation and Park Association and the Professional Grounds Management Society, we estimate that 34,679 NPT hours will be needed annually to bring park maintenance to a higher level.

Calculating the amount of time needed to reach higher maintenance standards can be done in a number of ways:

- Cost per unit of maintenance work;
- Square foot cost
- Establishing performance standards based on work activities

During interviews with staff and senior management, there was a general consensus that landscape maintenance at the Arnold Arboretum was a suitable standard of maintenance for the Muddy River Parks of the Emerald Necklace. On October 11, 2001 I met with Peter Del Tredici, Director of Living Collection, to gain an understanding of the current maintenance efforts at the Arnold Arboretum.

The Arnold Arboretum has about 232 acres requiring regular maintenance. The Arboretum landscape is broken down accordingly:

**Draft Maintenance Plan for the Muddy River Parks of the Emerald Necklace
Muddy Rivers Restoration Project**

- 150 acres of mowed lawn
- 5 acres of water
- 60 acres of naturalized vegetation including woodlands and meadows
- 3 acres of greenhouse and nursery
- 14 acres of gardens

The Arboretum has 13 full-time and 15 seasonal staff performing park maintenance. The Arboretum spends little or no time delittering or emptying trash cans, unlike public parks where trash removal can be the predominate maintenance task. In fact, the Arboretum has less than 12 trashcans.

Key factors for higher maintenance standards at the Arboretum are:

- Dedicated park staff
- Skilled staff
- Stable full-time staff with knowledge and commitment to maintenance of the Arboretum
- Combination of staff who are generalists supported by specialized staff

It should be noted that the Arboretum is, strictly, not a public park. While open to the public, the Arboretum is first and foremost a research facility and many management decisions are made with a curatorial perspective. The Muddy River Parks of the Emerald Necklace, on the other hand, is a public park and management and policy decisions are made in that context.

Using the Arboretum as an example, a square foot cost for maintenance can be developed that can serve as a reference point for looking at maintenance costs for the Muddy River Parks of the Emerald Necklace, although there are many differences and variables that exist between the two sites.

To determine a square foot maintenance cost for the Arboretum:

- The annual operating budget for landscape maintenance excluding the greenhouse, nursery and water \$962,000.
- In most parks, approximately 65-75% of the annual operating budget is salaries. Using 70%, approximately \$674,000 is spent annually for salaries.

$$\frac{\text{Annual cost for salaries}}{\text{Total Square Feet}} = \text{Cost per square foot.} \quad \frac{\$674,000}{(224 \text{ Acres} \times 43,560 \text{ sq. ft/acre})} = \$0.07 \text{ cents/sq. ft.}$$

If we assume a higher sq. ft. cost for the Muddy River Parks of the Emerald Necklace would be necessary due to the added time spent removing trash and emptying trashcans, then a cost of \$0.10 cents/sq. ft. will serve as a useful starting point. The cost for maintenance of Prospect Park in New York City is estimated to be \$0.12 cents/sq. ft.

A large portion of both the Muddy River Parks of the Emerald Necklace (23%) and the Muddy River Restoration Project (54%) is water. Calculating maintenance of the water

**Draft Maintenance Plan for the Muddy River Parks of the Emerald Necklace
Muddy Rivers Restoration Project**

is complicated as it includes not only park-related costs but also costs included in BMPs that may be shared by the different entities on a watershed ownership basis and includes the Boston Water and Sewer Commission. **For the purposes of calculating estimated maintenance hours and costs for this report, the water is not included and will be investigated separately. Estimates are for parkland only.**

$\$0.10 \times 6,186,000 \text{ sq. ft. (142 acres} \times 43,560 \text{ sq. ft./acre)} = \$618,600$ and

If we assume an average salary cost of \$30,000/employee;

$\frac{\$618,600}{\$30,000/\text{FTE}} = 20.7 \text{ Total FTE's}$

This square foot cost is only to be used as a starting point for estimating future maintenance costs. The calculations above do not take into account net productive time and are therefore somewhat lower than our projected numbers.

12. Impact of Capital Projects

The increase in capital spending will only serve to inflate the gap between available and needed maintenance hours. While under construction, the areas affected by capital projects are usually closed off to the public for the length of the project, which slightly reduces the total maintenance workload. When completed and reopened, the renovated site, will add to the existing park maintenance load. The Muddy River Restoration Project will add dramatically to the maintenance load. The table below shows the increased Muddy River Restoration Project planting

When the Muddy River Restoration Project is completed, there will be an increase of 24.5 acres of newly restored landscape including 15 acres of lawn, 8.15 acres of planted areas and 215 new trees that will require regular maintenance, particularly after the two-year maintenance guarantee period expires. One of the planting requirements recommended by the Citizens Advisory Committee (CAC) is that the Contractor(s) be required to maintain all plant materials for two years after acceptance of the work.

Maintenance for the new plant material during the two-year maintenance period includes:

- Watering
- Fertilization
- Weeding
- Mulching
- Disease and Pest Control
- Plant Replacement
- Control of Invasives

**Draft Maintenance Plan for the Muddy River Parks of the Emerald Necklace
Muddy Rivers Restoration Project**

Table 4: Additional planting from Muddy River Restoration Project.

Project	Trees	Low	Med	High	Lawn	Wetland	Peren.
		Shrubs	Shrubs	Shrubs	Areas	Plants	
Wards Pond	1	2,425	2,875	1,750	8,350	2,360	1,625
Willow Pond	7	20,175	4,900	13,660	23,720	1,650	4,700
Leverett Pond	24	21,088	7,835	1,468	112,615	3,860	
Riverway	57	51,308	51,955	34,345	110,480	18,090	
Sears Parking Lot	28	7,700	3,050	5,400	25,200	1,260	
Back Bay Fens	98	24,635	59,515	34,450	389,100	32,330	
Total Trees	215						
Totals (square feet)		127,331	130,130	91,073	669,465	59,550	6,325
Totals (acres)	24.5	3	3	2	15	1.3	0.15

It should be noted that the contractor would be responsible for **only** those areas within the contract area. It's likely that there will be other landscape areas outside and/or adjacent to the contracted area that will need mowing, horticulture care, delittering and emptying of trash receptacles, etc. during the two-year maintenance period.

Once the two-year maintenance period ends, Boston, Brookline and the MDC will assume responsibility for maintenance. The proposed construction schedule for the Muddy River Restoration Project extends from 2002 thru 2009. See Figure 5.1. The two-year maintenance periods will follow completed capital construction. Increased agency maintenance responsibilities will be phased, with the greatest maintenance impact occurring between years 2006-2008. The MDC will be responsible for the Charlesgate project area in early 2005; Boston will assume increased maintenance responsibilities beginning in early 2006 and Brookline in early 2008.

It is estimated that a total of 18,688 NPT hours will be needed annually just to maintain the newly restored Muddy River Restoration Project areas.

13. The Gap Between Needed Hours and Available Hours

The estimated amount of time required for maintenance of the Muddy River Parks of the Emerald Necklace is 34,679 hours annually. See Table 5. The gap between needed NPT hours and total NPT hours available is estimated to be 21,575 hours, which equals 13.8 FTE's as calculated by NPT.

The challenge is to develop strategies that will close as much of the gap as possible through:

- Better management
- Increased staff productivity
- Use of outside contractors
- Reducing non-productive time
- Increased staff

Leaving a relatively smaller portion of maintenance to be dealt with through priority setting or eliminating work.

Table 5: Summary of Hours Needed to Maintain the Muddy River Parks of the Emerald Necklace

	Hours at Current Standards	Hours at Higher Standards	Muddy River Restoration Project Impact**	Additional Hours
General Maintenance	8,387	18,100	8,400	9,713
Horticultural Care	3,155	12,043	7,470	8,888
Repair/Preservation	1,562	3,011	1,868	1,449
Operations/ Special Events		1,525	950	1,525
Totals *	13,104	34,679	18,688	21,575

* Totals are Net Productive Time for field staff, does not include supervisory or management staff.

** Included in Hours at Higher Standards

**Draft Maintenance Plan for the Muddy River Parks of the Emerald Necklace
Muddy Rivers Restoration Project**

Table 6: Summary of Additional Hours for Each Municipality

	Hours at Current Standards	Hours at Higher Standards	Muddy River Restoration Project Impact	Additional Hours Needed
General Maintenance	8,387	18,100	8,783	9,713
Boston	5,368	11,584	5,621	6,216
Brookline	1,426	3,077	1,493	1,651
MDC	1,594	3,439	1,669	1,846
Horticultural Care	3,155	12,043	6,998	8,888
Boston	2,019	7,708	4,479	5,689
Brookline	821	2,047	1,190	1,226
MDC	315	2,288	1,329	1,973
Repair/Preservation	1,562	3,011	1,035	1,449
Boston	1,200	1,927	662	727
Brookline	362	512	176	150
MDC		572	197	572
Operations/ Special Events		1,525	656	1,525
Boston		976	420	976
Brookline		259	112	259
MDC		290	124	290

Totals are for field staff and do not include supervisory or management staff

The above chart shows the estimated additional hours of net productive time needed by task for each of the entities to achieve higher maintenance standards throughout the Muddy River Parks of the Emerald Necklace.

The total number of additional hours needed by **each** entity to achieve higher maintenance standards for their portion of the Muddy River Parks of the Emerald Necklace is:

Boston	13,608 NPT hours = 8.7 FTE's
Brookline	3,286 NPT hours = 2.1 FTE's
MDC	4,681 NPT hours = 3.0 FTE's

14. Higher Maintenance Guidelines

Maintenance Guidelines

Planted Areas (shrubs and perennials)



Well-maintained shrub plantings are weed-free, mulched and plant material properly pruned.

Shrubs and groundcovers provide numerous functions and are a vital part of the park landscape. When properly selected and maintained, they serve as focal points, accents, help control circulation, and provide an aesthetic appearance, which compliments and enhances the surrounding park landscape.

The annual maintenance program for new and established plants depends on the type of plant material and the skill levels of the personnel responsible for the work.

Maintenance of planted areas should include:

Watering

Insufficient and excessive amounts of water will induce plant stress and may eventually cause severe decline or death. Type of plant, size, exposure and competition with surrounding trees, shrubs and groundcovers affect the amount of water needed. A

general rule of thumb to estimate proper soil moisture content is to roll a small sample of soil into a ball, and if it crumbles when rubbed or squeezed, it probably has adequate moisture. If the soil can't be worked into a ball, the soil is too dry to provide sufficient water to plants. If the ball does not crumble when rubbed, the soil is too wet.

Fertilizing

The type and amount of fertilizer varies according to plant species. The best time to fertilize is before or during the plant's period of active rapid growth in spring and/or when soil conditions enable fertilizer absorption in late fall. Deciduous plants should be fertilized after their leaves drop. Avoid late summer applications of nitrogen (no later than mid-July) as this stimulates new top growth that will not have sufficient time to harden-off before winter. Scratch the fertilizer into the top inch of soil if there is no mulch or thoroughly soak the mulch to wash the fertilizer into the soil. Applying fertilizer just prior to a rain will help save labor and reduce water use.

Mulching

Maintain about a 2-3 inch layer of mulch throughout the year. This will provide the constant supply of humus that plants need. Apply mulch in early spring to prevent soil moisture loss caused by early summer hot weather. Apply mulch in early winter to protect plant roots from drying out as soil thaws and refreezes.

Pruning

Pruning requires a full understanding and knowledge of the growth and flowering habits of various types of shrubs; that is, to know what, when, and how to prune. Shrubs are pruned to, 1) remove dead, diseased, or damaged wood; 2) to correct, rejuvenate or balance the shape of a plant; 3) to maintain or improve floral bloom; and 4) to shape them as design elements of an overall landscape design – i.e., as a formal hedge, or more naturalistic planting.

Evergreens require minor pruning to remove dead and diseased branches or to remove spent blossoms before they go to seed.

Shrubs are also pruned according to their season of flowering, that is, those that flower on old wood and those that flower on new wood. In general, prune shrubs that flower before July immediately after they bloom. Prune shrubs that flower after July in the winter or early spring. Roses are pruned more often than any other shrubs.

It should be noted, that many shrubs should not be pruned or do not require regular pruning, unless they are to be maintained as formal hedges. For example, do not prune any shrub in a shape (ball, cone) unless it is in a formal garden and an integral part of the design.

Pest control

A successful pest control program requires knowledge of the causes and symptoms, which affect plant stress. This includes disease, insect and weed infestation, mechanical damage, drought, poor soil conditions, nutrient deficiency, etc. Once a problem has been diagnosed, make sure the appropriate staff follows the approved control measure for managing the pest.

Winter Protection

Generally a combination of several factors causes winter injury to plants. This includes the plant's condition, weather influences, site factors and maintenance practices. Improper or deferred maintenance practices could cause winter injury. Excessive or late fertilizer application induces soft vegetative growth, which will not harden off before winter. Over-mulching reduces aeration and encourages root formation in the mulch layer.

There are a number of maintenance practices, which may reduce winter injury to plants. Correct soil drainage problems, or relocate plants. Water the plants as needed throughout the summer and fall. Deep soak the roots of shrubs at least once a week between mid-October and mid-December. Spray antitranspirants on young plants and those sensitive to windburn damage. Fertilize evergreens with a controlled release fertilizer after the first killing frost. Add mulch if needed or loosen it to increase its insulation capabilities. If injury has occurred, delay corrective action until spring. It is much easier to determine the actual extent of damage when new growth begins. Lightly fertilize and water thoroughly during the following summer.

Groundcovers

Groundcovers help to enhance and compliment the visual character and scale of the landscape. They provide texture, form and color contrast and a can be used to correct landscape problems such as soil erosion, wet and dry areas, difficult mowing areas, etc.

Once fully established, most groundcovers will require some maintenance. Weeding is extremely labor intensive and plants roots can be severely damaged by cultivating or pulling weeds. In addition, fall leaf removal can be difficult in areas with extensive or dense groundcover plantings.

Pest Management

Pests become resistant to pesticides, which are used routinely. Routine use of the same pesticide kills susceptible pests within a population, simultaneously; it leaves the resistant individuals to reproduce "pesticide resistant" offspring in the following generations. Integrated Pest Management (IPM) practices should be applied wherever practicable.

Integrated Pest Management (IPM)

IPM is a decision making process that determines if you need pest suppression, when you need it, where you need it, and what strategies or tactics to use.

In IPM, pest populations are monitored on a regular basis. Monitoring is the key element in a successful IPM program. Park managers must realize that they can accept a certain pest population level. The manager should take a realistic approach and concentrate on managing the population at tolerable levels.

Through regular monitoring the manager is always aware of the pest's life cycle and its population level, and thereby knows when the population is building to the damaging or injury level. Certain pest management strategies may require the use of a pesticide.

Turf



Well-maintained turf includes no bare areas along path edges.

No maintenance operation affects the appearance of a park more dramatically than mowing. Mowing is the heart of turf care. A well-groomed patch of weeds can present a pleasing appearance while poorly groomed turf of the finest grass available will not look good. Without mowing, most turf grasses will grow to heights of 2 to 3 feet. Limiting turf to 2 to 3 inches or less puts tremendous stress on the plant. Proper mowing practices and equipment minimize this stress.

Fertilization

The health of turf grass is dependent on a fertilization program derived from sound soil test results. Fertilizer feeds the roots, which in turn provide nutrients to the leaves and stems.

Lime

The specific lime requirements for any area can only be determined by a soil test. Lime can be applied at any time of the year, but late fall or early winter is preferred because the rain, melting snow, and freeze-thaw cycles all help work the lime into the soil. There is also a slight advantage to applying lime immediately following aeration. Lime should not be applied within a week of fertilization.

Aeration

Constant use of turf areas, whether ball fields or open turf areas leads to soil compaction. Reversing compaction is a slow process. Aeration helps to improve the rooting environment, by making it easier for air and water to enter the soil, while the natural structure-building processes proceed. Fall is the best time to aerate.

Annual Turf Renovation

Periodic or cyclic renovation of turf areas should be anticipated. Frequency can vary from yearly to every 5 years depending on the use, level of care, how well it was established, weather conditions and many other factors. A soil test should always precede renovation to determine lime and fertilizer needs. The degree of renovation required can vary from little more than overseeding and rest, to complete rebuilding, starting with regrading.

Weeds

A good weed management program is based on the premise that a healthy vigorous turf is most resistant to weed invasion. This means that cultural practices (fertilizing, lime, mowing, species selection, etc.) are conducive to healthy vigorous turf. A healthy turf will out-compete most weeds.

Water Bodies



Control of invasive species along embankments and in the water along with regular monitoring of water quality are all part of water body management.

Water is an important feature of the Muddy River Parks of the Emerald Necklace. Given the importance of water, it is essential that it be kept in good condition, both in the treatment of the edges and in the quality of the water. The water bodies in the Muddy River Parks of the Emerald Necklace will require ongoing maintenance along the embankments and in the water.

Routine maintenance tasks will include:

- Trash removal
- Removal of water-borne vegetation such as duckweed, etc.
- Removal of invasive vegetation
- Regular water tests to monitor water quality

**Draft Maintenance Plan for the Muddy River Parks of the Emerald Necklace
Muddy Rivers Restoration Project**

Maintenance of the park water bodies will require specialized equipment seen below:



Maintenance of water bodies may require specialized equipment.

Trees



A healthy tree canopy is important to a well-maintained park.

More than any other landscape element, trees provide the most prominent visual component in the landscape. Tree preservation and management involves the protection of the canopy, trunk and roots.

Pruning

Periodic removal of dead and broken branches improves the appearance and structure of trees, but more importantly eliminates breeding sites for insect and disease organisms. It is desirable to remove branches that may be crossing or rubbing with another. Branches that exhibit a narrow angle of attachment to the trunk should be removed because the vascular tissues are compressed within the branch and structural failure of the branch becomes more likely as the tree ages. It is also important to thin the canopy of trees to remove wind resistance, limit storm damage and allow sunlight to filter down to aid in turf development.

Tree Protection Measures

Tillage or cultivation to promote turf establishment should not take place within the drip line of trees as this causes substantial injury to tree roots.

Repeated nonselective applications of herbicides such as Round-Up should be avoided, as toxicity to root systems and subsequent foliage damage may occur.

Trees should be protected against construction damage by installing fencing beyond the drip line (edge of canopy) of the tree. Where possible, groups of trees should be protected by a single fence. Equipment or material storage should not occur within the drip line of trees.

Trees in public parks are subject to intensive visitor use. Over time this use can have severe impacts.

Ongoing public use includes the following:

- Compaction begins to change the soil
- Groundcover materials such as turf are lost or damaged
- Shrubs and understory trees are lost
- Older trees begin to decline – tops die back
- Areas become so impacted that users begin to seek other locations

Park managers must be vigilant to spot these trends early and initiate a corrective practices such as fertilization, pruning, etc.

Site Furnishings



Site furnishings should be uniform and park-wide maintenance standards developed.

Maintenance of park site furnishings includes:

- Bench maintenance – repair, replacement, painting
- Trash cans – emptying, replacement
- Light poles – replace bulbs, painting, realigning
- Catch basins – cleaning, repair
- Drinking Fountains – cleaning, repair, turn on & off
- Graffiti Removal

Regular maintenance of the park's site furnishings is an important task, which is often overlooked or only done on an emergency basis. Keeping park furnishings in good repair makes for a more inviting and usable park.

A uniform set of park furnishings should be developed for the Muddy River Parks of the Emerald Necklace including trash cans, benches, lighting standards and drinking fountains. Olmsted designed the park as a whole. Standardized furnishing would reinforce the historic character of the park while adding visual continuity to the park. In addition, maintenance would be easier if there were one or two bench styles instead of five or six. Repairs are more likely to be done with “available materials” or not done at all when too many options exist.

As much as possible, maintenance practices of park furnishings should be standardized throughout the Muddy River Parks of the Emerald Necklace. This will reinforce the sense of one park both visually and managerially.

Equipment

Having the correct equipment to perform maintenance tasks cannot be overstated. Identifying useful new equipment, ensuring the optimal equipment mix is maintained and developing an equipment replacement schedule are important issues for maintaining equipment. Even in cases of a well-equipped fleet and well-maintained equipment, there is the need to always be planning for replacements and experimenting with newer, more effective vehicles.

Small electric or gas powered vehicles and mini pickups should be purchased to improve operational effectiveness throughout the Muddy River Parks of the Emerald Necklace. Small vehicles are more appropriate than full size vehicles for reasons of maneuverability, economy, are easy to maintain and are more park-user friendly. The use of full-size vehicles such as pickups should be examined and retained only to the extent they fill needs which cannot be met by smaller, more economic and user-friendly vehicles.



Small gas or electric vehicles can be used for both horticultural and non-horticultural maintenance tasks.

Structures



Historic park structures require specialized maintenance.

The historic features of the Muddy River Parks of the Emerald Necklace demand a level of skilled maintenance. Specific site features, such as bridges, shelters, and monuments, may require historic preservation skills. Successful historic maintenance must utilize traditional carpentry and masonry skills. The training of workers in traditional building crafts is almost totally neglected.

The organization of these work crews is of particular importance. Traditionally, skilled craftsmen have been organized into separate trades. Carpenters do carpentry work on crews with other carpenters. Masons, likewise. Multi-skilled crews save managerial time and effort. Managers can dispatch a multi-skilled crew to do a job, with the necessary skills to finish the work. One multi-skilled crew can complete a project with a minimal amount of coordination with other crews.

Woodlands

The woodland areas in the Muddy River Parks of the Emerald Necklace are important landscapes that are in need of maintenance. To date, very little management work has been done. Although budgets for these areas might be modest, thoughtful timely intervention is more critical than large sums of money when implementing a woodland management program. Some work may be performed by teams of volunteers, under the direction of an experienced urban forester.

An overall woodland management and restoration plan should be developed. The forested areas of the Muddy River Parks of the Emerald Necklace have deteriorated significantly over the past years. Erosion and bare, compacted soil are increasing in extent and a few aggressive exotic species are naturalizing throughout, displacing valued native plant communities and remnant planted landscapes. At the same time, the infrastructure of trails, paths, bridges, and storm water facilities are in need of repair.

An approach to woodland management would include:

- Working in one area at a time, gradually remove the most noxious invasive species. If the ground is disturbed or canopy gaps are opened by removals, planting of native woodland plants should follow immediately.
- Begin to re-establish the shrub and understory layers that are presently underrepresented in the woodlands with native woodland plants.
- Monitor the canopy gaps that exist and plant groves of small trees to gradually fill these in.
- Repair trails and paths to address storm water management problems and off-path trampling.

**Draft Maintenance Plan for the Muddy River Parks of the Emerald Necklace
Muddy Rivers Restoration Project**

- A Forest Management Team should be formed to develop a planning, design, and implementation plan for the woodlands. Long-term woodland goals and policies should be developed. Areas that should be examined include:
 - Off-trail use of bicycles;
 - Off-trail use of vehicles;
 - Trampling
 - Storm water management
 - Spread of exotic invasive vegetation;
 - Maintenance & security
 - Education & signage



The woodlands can be used to run programs for school groups.



Volunteer opportunities can be developed for the woodlands.

Erosion Control



Regular maintenance of eroded areas is needed to prevent increased erosion and clogging of catch basins and water bodies.

Erosion is a naturally occurring process. Heavy use tends to produce rapid, and drastic erosion. Erosion is harmful in many ways. Soil is transported from its original location, leaving depressions in the surface, voids, or undermined plants and structures. The soil is deposited at a new location further downstream, where it may clog waterways or fill catch basins. In addition to the physical deposits of soil particles, the fertilizers, pesticide and other chemicals lost by erosion are a major non-point source of water pollution.

The most effective method of erosion control is a healthy, vigorous vegetative cover. This may consist of a lawn, perennial groundcover, shrubs or tree canopy. Well-fertilized turf areas show less soil loss and chemical run-off than thin, under-fertilized turf.

Erosion areas should be stabilized immediately before soil loss occurs and causes siltation of water bodies and catch basins occurs.

15. Management Recommendations

The Muddy River Parks of the Emerald Necklace should function as one entity

- **Reestablish the primacy of maintenance in the Muddy River Parks of the Emerald Necklace**

Reestablishing the primacy of park maintenance is a key recommendation of this report. The current fragmentation of services has an enormous impact on park maintenance. The management and necessary skills to perform quality park maintenance have declined. Park maintenance requires specialized skills and creative management and entrepreneurial skills. Creative and flexible management strategies and initiatives are needed to develop an integrated management structure to manage, restore, maintain and operate the Muddy River Parks of the Emerald Necklace.

Park maintenance falls into five basic categories:

- Cleaning and repair – this includes the monitoring of general park conditions, the removal of trash and the cleaning, painting, minor repairs to playgrounds, benches, fences, paths and so forth
- Preservation and conservation – includes the small-scale restoration and preventative maintenance of such artistic and historic components of the park landscape as statues, bridges, stairways, shelters, masonry walls etc.
- Groundskeeping – includes planting, pruning, mowing, mulching, fertilizing and watering of park lawns, flowers, shrubs, and trees
- Woodland Management – includes the specialized skills and management strategies needed to manage and maintain the woodland areas
- Water body Management – includes the specialized skills and management strategies needed to manage and maintain the small streams, rivers, ponds, and lake areas

While many of the recommendations in this report address the specifics of park maintenance and operations, good management requires not only efficient and effective methods and procedures, but effective good governance as well.

- **The basic structure of accountability should be geographic.**

The Muddy River Parks of the Emerald Necklace, at present, are not necessarily experiencing the kind of active deterioration common to heavily used urban parks. Their status might be described as a gradual decline that will become more evident as the current mature trees die off while the maintenance and support staff are stretched further to perform increasingly routine duties.

The restoration of park values for the Muddy River Parks of the Emerald Necklace hinges on the ability of those who are directly involved in their management and care to perceive the parks as an important cultural resource

and living system. This will require, above all, training aimed at having the maintenance and support staff recognize the value of the resource and that they are instrumental in ensuring the further health and survival of the parks. Raising the level of commitment, developing a sense of ownership, and new standards of care by the staff that are responsible for the day-to-day care of the parks are essential steps toward restoring the Muddy River Parks of the Emerald Necklace and developing the level of care necessary to sustain their renewal.

Several of these recommendations are mentioned under other sections; they are included here for emphasis:

- Implement a park landscape management plan to ensure that no areas of the park are neglected by maintenance and that the overall level of care is raised significantly
- Initiate new staff training programs that build landscape maintenance skills and instill a sense of commitment to the park. Training and staff recognition programs should be developed and implemented to identify and reward staff and instill pride and professionalism within Boston and Brookline parks' departments
- Develop and implement a dedicated park-based maintenance strategy to instill a sense of ownership
- Develop and implement a tree management program and replanting plan that utilizes information from urban forestry, historical documentation, as well as traditional arboricultural methods
- Develop a volunteer corps for projects such as woodland management, slope stabilization, erosion control, and soil decompaction that can be a vehicle for developing skills and helping with ongoing maintenance tasks
- Continue to develop connections with local environmental groups, community groups, state forestry programs, urban renewal programs, and other groups that can conduct restoration workshops or contribute ideas and resources.

▪ **To implement geographic accountability, the role of Muddy River Park Coordinator should be established.**

A coordinator role should be created that would serve as the point person for all maintenance work. The coordinator would be appointed for a period of one year from existing senior staff alternating between Boston and Brookline. The primary responsibility would be to coordinate the delivery of maintenance services for the Muddy River Parks of the Emerald Necklace. The coordinator would be responsible for:

- Chairing a monthly meeting to review and coordinate ongoing maintenance tasks
- Serve as the point person for public contact for comments and complaints
- Provide monthly reports to Boston and Brookline summarizing park maintenance, critical issues or public complaints

- Provide maintenance review and recommendations for capital projects

- **Capital Projects project manager should have thorough knowledge of construction practices and their long-term effect on maintenance**

Many maintenance problems are the result of improper construction practices. Stockpiling of construction materials under the drip lines of trees, root damage caused by vehicle traffic and excavation are common construction practices that cause long-term maintenance problems that show up after construction is complete and cause the rapid decline and death of park trees and turf areas. Failure to follow proper planting specifications or installing poor quality plant material will also cause long-term maintenance problems. Proper monitoring of construction and contractors will reduce these and other problems. The project manager should have a thorough knowledge of the impact of construction practices on maintenance. This person should be the bridge between the capital construction/maintenance period and eventual maintenance by the municipalities.

- **Investigate the options for a park-based maintenance facility**

Boston and Brookline should jointly investigate options for a park-based maintenance facility. Existing park structures as well as adjacent facilities should be investigated as possible options. A park-based maintenance facility would improve park maintenance by:

 - Increasing operating efficiency by reducing travel time
 - Permitting the use of smaller vehicles such as golf carts and small maintenance equipment such as Taylor Dunn style vehicles
 - Allowing for sharing of expensive specialized equipment
 - Providing centralized storage area for park materials and supplies
 - Providing a centralized administrative/maintenance area for park-based crews
 - Increasing coordination and better use of staff and resources

Strengthen and Define the Roles between Public and Private Sectors

- **The Emerald Necklace Conservancy should be supported in its role as an advocate for the Muddy River Parks of the Emerald Necklace**

The Emerald Necklace Conservancy can play a key role in advocating for the Muddy River Parks of the Emerald Necklace.

- **Explore the possibilities of partnerships with other organizations to increase horticultural practices and skills in the parks.**

The City of Boston and the Town of Brookline have committed to increasing their attention to horticultural maintenance in the Muddy River Parks of the Emerald Necklace. However staff skill may be lacking. Staff who shows an interest and ability should be provided with opportunities to increase their skills.

Training opportunities, perhaps with the National Park Service or Arnold Arboretum, need to be explored to build skills. Other ways of bringing skill to the parks should also be explored such as volunteers, master gardener programs, and endowed positions in horticulture.

- **The Emerald Necklace Conservancy should be supported in its efforts to develop and implement volunteer opportunities in the Muddy River Parks of the Emerald Necklace**

The City of Boston, the MDC and the Town of Brookline should work closely and support the Emerald Necklace Conservancy in its efforts to develop and implement volunteer opportunities in the Muddy River Parks of the Emerald Necklace. In particular, every effort should be made by these entities to gain union support and cooperation for volunteer projects.

16. Maintenance Recommendations

- **Promote efficiency in Maintenance**

To every extent, the City of Boston, the Town of Brookline and the Metropolitan District Commission should support the new maintenance plan and standards for the Muddy River Parks of the Emerald Necklace. The new maintenance plan is essential to setting consistent standards and practices for park maintenance.

- **Reestablish the primacy of maintenance within the Muddy River Parks of the Emerald Necklace**

Reestablish the basic park maintenance skills by forming a dedicated park workforce whose primary job responsibilities are park maintenance and repair in the Muddy River Parks of the Emerald Necklace.

Reestablish “lost” maintenance skills such as horticultural care, woodland management and water body management by:

- Setting higher horticultural standards
- Developing specialized woodland management and crews;
- Developing water body management practices

Assign a dedicated handyman to the Muddy River Parks of the Emerald Necklace as part of a dedicated park maintenance plan.

- **Develop and implement park-wide maintenance and management standards and guidelines for key maintenance areas**

A key recommendation of this report is to increase the standards and levels of maintenance, particularly horticultural care.

Develop a park-wide set of standards and practices for particular maintenance “areas” such as woodlands, gardens, open parkland, playgrounds, athletic fields,

turf should be developed. These standards should be adopted and linked to an inspection and ratings system to ensure park-wide consistency.

Other management options that investigate the appropriate size and scope of “in-house” verses contracting out of services should be investigated. A number of service contracts to deliver or augment small in-house crews may provide an efficient and cost effective strategy.

▪ **The season should be the basic organizing structure for park maintenance.**

While most public organizations operate on the basis of a fiscal or calendar year broken down into four equal quarters, this structure is not particularly meaningful for park managers. Some of the most important factors shaping the pattern of work – use, growing conditions, and weather – are tied to the season. Seasons, moreover, do not necessarily correspond neatly to quarters. They are of unequal length. It is feasible to define seasons as clusters of months approximating the natural conditions.

Park management should define “official” seasons as groups of months to structure park operations. The following are suggested:

Winter:	December through February (3 months)
Spring:	March and April (2 months)
Summer:	May through September (5 months)
Fall:	October and November (2 months)

For planning purposes, the year should begin on March 1st and end on February 28th. Any work plan should be divided into four seasonal plans. Each seasonal plan has a basic theme reflecting the natural conditions, level of use and the appropriate work.

To a significant extent, seasonality is part of the natural rhythm of work in a park: spring and fall are important planting seasons; the summer is the peak period for cleaning and operations (e.g. special events). Some of the aspects of seasonality are less obvious.

An organized formal preventative maintenance and repair program should be organized as part of the winter and spring. Late winter and spring are the natural time to repair winter damage (both horticultural and non-horticultural) and to prepare for the summer crowds. Priority areas and conditions should be identified and the assignment of special resources.

The focus of winter work program should be an intensive training program involving all full-time managers and park workers. The winter is the season of lowest use, and generally the lowest workload. Depending on the weather conditions, winter can also be a time to complete fall cleanup tasks as well as

perform preventative maintenance. In the best-managed operation there is some slack time. This time is better used for training than for inventing tasks or taking longer to do the tasks that need to be done. Training programs should be developed and implemented for:

- A comprehensive training program for first-level supervisors is the top training priority. This program should cover topics such as supervision of staff and volunteers, communication, computers, personnel and union rules and CPR.
- Workers should be cross-trained to help each other and to foster potential for teamwork. Horticultural skills should be taught along with communication, First Aid and CPR.

▪ **A dedicated park maintenance crew should be formed.**

A dedicated, uniformed multi-skilled park-based crew should be formed whose responsibilities would include cleaning, horticultural work, field maintenance and simple repair tasks.

A dedicated park staff would:

- Be responsible for all aspects of park maintenance and care of the park including cleaning, trash removal, horticultural care, mowing, basic pruning, and simple repair tasks such as bench repair, painting, and field maintenance
- Develop an understanding of changing user trends, which may affect daily operations.
- Provide a public face to all park users; be knowledgeable about the park and be able to answer questions

Each municipality should form an Emerald Necklace Crew from existing and new park staff. The Emerald Necklace crew would be staffed from and remain on their respective municipal payroll, but would be dedicated to maintenance of the Muddy River Parks of the Emerald Necklace. This staff would have additional maintenance responsibilities throughout the Emerald Necklace.

The staffing recommendations in this report represent only estimated needs for the Muddy River Parks of the Emerald Necklace and do not include the entire Emerald Necklace. Additional staff will be needed to maintain the entire Emerald Necklace. The dedicated park-based crew is a management concept that should be used throughout the Emerald Necklace with proper staffing levels.

▪ **Develop a tree maintenance and replanting plan for the Muddy River Parks of the Emerald Necklace.**

The mature deciduous shade trees are probably the foremost character-defining feature of the Muddy River Parks of the Emerald Necklace.

A primary recommendation is to begin active management of the valuable, large shade trees that can benefit from regular pruning and disease management.

Selective removal of diseased trees is important for the health of the remaining trees and in some cases advisable because the diseased or damaged trees are potential hazards.

A second major recommendation is the development of a replanting strategy for the Muddy River Parks of the Emerald Necklace. New trees should be planted annually, selected from a list of trees that are appropriate from both a historic and ecological perspective.

- Develop a management program for pruning, fertilization and removals
 - Develop a planting plan for the park, with the distribution of trees to reflect historic groupings and vistas. Trees should provide shade for roadways and picnic areas, emphasize vistas, and stabilize eroded areas and streams. This would include gradual removal unhealthy or inappropriate trees, such as Norway Maple.
 - Begin to restore the balance and diversity of tree species by planting trees that were part of the park's earlier history and have since decreased.
 - Conduct planting on a regular (if possible, on an annual) basis, to ensure a range of various aged trees for the future.
- **Develop a woodland management strategy**
Both the City of Boston and the Town of Brookline should work together in conduction a comprehensive woodland management study, along with a comprehensive woodland policy. The process should begin by convening a woodland advisory committee and organizing a series of woodland seminars to guide the development of a woodland program and policies that meet the ecological needs of the Muddy River Parks of the Emerald Necklace.

To date, very little management work has been done in the woodlands. Although budgets for these areas might be modest, thoughtful timely intervention is more critical than large sums of money when implementing a woodland management program. Some work may be performed by teams of volunteers, under the direction of an experienced urban forester. A forest management team should be formed to develop a planning, design, and implementation plan for the park's woodlands. Long-term woodland goals and policies should be developed. Areas that should be examined include:

- Off-trail use of bicycles and vehicles
- Trampling
- Storm water management
- Spread of exotic invasive vegetation
- Maintenance and security
- Education and signage

A comprehensive woodland management and restoration plan should be developed. The forested areas of the park have deteriorated over the past

years. Erosion and bare compacted soil are increasing in extent and a few aggressive exotic species are naturalizing throughout, displacing valued native plant communities and remnant planted landscapes. At the same time, the infrastructure of trails, paths, bridges, and storm water facilities are in dire need of repair.

A woodland plan may focus on:

- Working in one area at a time, gradually remove the most noxious invasive species.
- If the ground is disturbed or canopy gaps are opened by removals, planting of native woodland plants should follow immediately.
- Begin to reestablish the shrub and understory layers that are presently underrepresented in the woodlands with native woodland plants.
- Monitor the canopy gaps that exist and when the budget permits, plant groves of small trees to gradually fill in.
- Repair trails and paths to address storm water management and off-path trampling.

A woodland management strategy would provide an opportunity to establish woodland management skills and develop volunteer opportunities. A donor program could be developed to publicly focus attention on the important role of trees and woodlands to the City of Boston and Town of Brookline and the urban environment.

17. Implementation Recommendations

Implementation Strategies

The Muddy River Parks of the Emerald Necklace presents a formidable management challenge. Despite its peaceful, natural beauty, a dynamic tension exists in the Parks. Its design contains an inherent tension, a man-made landscape that must accommodate visitors. Park maintenance creates a dynamic tension: can the park today have lush lawns and diverse plantings, as the designers intended, or can no more be done than keep the place clean and the grass mowed: a management structure that fragments the delivery of services and reduction of skilled staff exacerbate the tension.

The Muddy River Parks of the Emerald Necklace is complex. The number and type of visitors require a complex service delivery system. Visitors mean that a high level of services is committed to daily cleaning. The landscape design of the Park is complex, demanding labor-intensive servicing and a consideration of aesthetics in making decisions, an unusual situation for an urban park. Finally, service delivery is complicated by the fact that other entities have service responsibilities for the Muddy River Parks of the Emerald Necklace.

Preserving Capital Re-investment

The challenge for park managers of the Muddy River Parks of the Emerald Necklace is how to introduce sound management practices that will:

- Effectively preserve and protect the capital reinvestment.
- Introduce higher and consistent park-wide standards of maintenance.

These management strategies must recognize the need for constant, vigilant cleaning and horticultural care that protect the Muddy River Parks of the Emerald Necklace while encouraging people to enjoy the parks to the fullest. All these management decisions must be made in an environment where resources are scarce and the voices of constituency groups are strong.

Park maintenance is of particular importance at this time. The Muddy River Parks of the Emerald Necklace has suffered the effect of tight maintenance funding, an aging workforce, loss of skilled staff, and the natural deterioration of the aging process. Like all public entities, the MDC, Boston and Town of Brookline must do more with less, thus challenging its managers to find operating efficiencies and new sources of revenue and to sharpen arguments for increased operating and capital budget resources.

The objective of this plan is to develop consistent standards and practice of maintenance throughout the Muddy River Parks of the Emerald Necklace. To this end, each of the three entities needs to meet its respective responsibilities. The MDC, in particular, has suffered extensive budget cuts affecting its ability to meet existing maintenance responsibilities, let alone additional responsibilities. The ability of the MDC to meet the additional maintenance responsibilities resulting from the completed Muddy River Restoration Project is questionable without a substantial increase in their operating budget. The City of Boston and Town of Brookline should support the MDC in its efforts to increase its operating budget. The MDC is responsible for approximately 35 acres or 19% of the Muddy River Parks of the Emerald Necklace. In addition, much of the area maintained by the MDC is highly visible. Failure to maintain those areas will only serve to increase the public perception that little or no maintenance is being done. If there is no substantial budget increase, the three entities will need to discuss options for maintenance of those areas within the MDC's jurisdiction.

Managing the Muddy River Parks of the Emerald Necklace over the next ten to fifteen years of rebuilding and beyond calls for improving management, which in any organization is difficult and time consuming. In public municipalities, without profits to spur efficiency, the task is even more complicated. A number of elements are required to bring about change:

- The agency's entities managers all levels must be committed to it;
- Resources have to made available for it

Closing the Gap that Exists Between Needed and Available Hours

We estimate that 34,679 NPT hours will be needed annually to maintain the Muddy River Parks of the Emerald Necklace at higher standards. The Muddy River Restoration project alone will require 18,688 NPT hours annually to maintain the restored landscape. Most of the added hours for maintenance will be needed beginning in 2006. The MDC will be responsible for the Charlesgate project area in early 2005; Boston will assume increased maintenance responsibilities beginning in early 2006 and Brookline in early 2008.

The estimated gap between needed and available NPT hours is estimated to be 21,575 NPT hours, which equates to 13.8 FTE's. Strategies for closing the gap should begin as soon as possible and not wait until capital projects are completed.

This report highlights a number of management and maintenance recommendations for improving maintenance and raising maintenance standards. Many of these can begin now, don't increase existing operating budgets, and will improve park maintenance.

18. Strategies for Closing the Gap

Short-term Recommendations (years 0-2)

- **The Muddy River Parks of the Emerald Necklace should be seen as one park**
To the fullest extent possible, the MDC, City of Boston and Town of Brookline should work to the same standards to reinforce the public perception of one park.
- **Role park coordinator should be established and implemented**
Create the position of park coordinator to coordinate park-wide maintenance among three entities to initiate geographic (park-wide) accountability.
- **Develop selected park-wide maintenance standards**
Develop park-wide maintenance standards for selected maintenance tasks such as mowing, bench repair, and horticultural maintenance for new plantings.
- **Form dedicated maintenance crew for the Muddy River Parks**
From existing park staff, identify and form a Muddy River Parks maintenance crew.
 - Develop and implement joint training sessions
 - Coordinate mowing schedules and practices
 - Develop joint “3 x 3” projects with resources from Boston, MDC and Brookline for a cleanup or horticultural project in a specific area of the park lasting one to three days
 - Identify projects such as graffiti removal on trash cans; set standards and completion dates
- **Define and sanction the role of the role of the Emerald Necklace Conservancy**
- **Strengthen the role of the Emerald Necklace Conservancy**
MDC, City of Boston and Town of Brookline should share information with the ENC to allow the development of a two-year strategic plan for Emerald Necklace Conservancy to guide its fundraising and programmatic efforts.
- **Develop a two-year park-wide tree removal and pruning plan**
Develop a two-year park-wide tree removal and pruning plan approved and funded by MDC, City of Boston, and Town of Brookline using outside contractors.
- **Schedule two (spring and fall) park-wide cleanup days involving MDC, Boston, Brookline and volunteers**

- **Develop and implement joint winter training program focusing on First Aid, CPR and supervisory training**

Medium-term Recommendations (years 3-5)

- **Expand park-wide maintenance standards to include horticultural tasks**
- **Investigate options for a park-based maintenance facility**
- **Rotate Park Coordinator**
- **Continue to support and develop dedicated maintenance crew**
- **Purchase small electric or gas vehicles for park maintenance**
- **Continue and expand tree removal and pruning contract**
- **Develop park-wide tree replanting plan**
- **Investigate additional maintenance tasks suitable for contracted services**
- **Develop park-wide trash plan and standardized receptacles**
- **Increase use of volunteers by 25%**
- **Support and strengthen role of Emerald Necklace Conservancy**
- **Add 3-4 skilled horticultural staff**
- **Continue and expand joint training to include new horticultural tasks**

Long-term Recommendations (5 –10 years)

- **Develop and implement plan to meet increased maintenance needs resulting from the Muddy River Restoration Project**
- **Expand joint horticultural training**
- **Increase use of volunteers by 75%**

**Draft Maintenance Plan for the Muddy River Parks of the Emerald Necklace
Muddy Rivers Restoration Project**

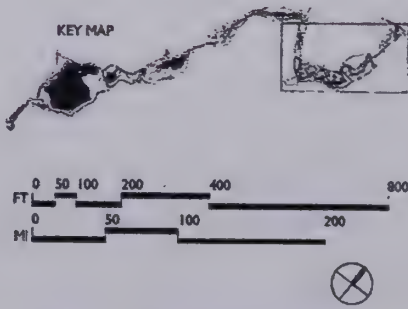
- **Add 3 skilled horticultural staff**
- **Add 2-3 new maintenance staff**
- **Assist the Emerald Necklace Conservancy to develop its role and responsibilities**
- **Increase funding for tree maintenance particularly replanting efforts**



THE EMERALD NECKLACE-MUDDY RIVER PARKS
AGENCY AREAS OF RESPONSIBILITY MAP
FIGURE I.1

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FAX: 732 572 7161
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- BOSTON PARKS
- BODY OF WATER
- METROPOLITAN DISTRICT COMMISSION
- MASSACHUSETTS HIGHWAY DEPARTMENT

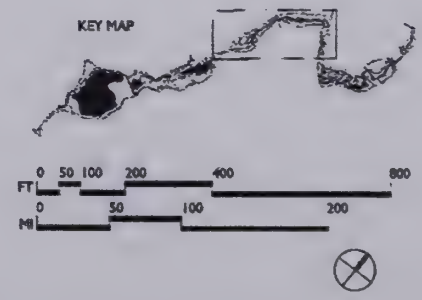


THE EMERALD NECKLACE - MUDDY RIVER PARKS
AGENCY AREAS OF RESPONSIBILITY

THE EMERALD NECKLACE-MUDDY RIVER PARKS
AGENCY AREAS OF RESPONSIBILITY MAP
FIGURE 1.2

ETM ASSOCIATES, L.L.C.
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- BROOKLINE
- BOSTON/BROOKLINE TOWN LINE



THE EMERALD NECKLACE - MUDDY RIVER PARKS
AGENCY AREAS OF RESPONSIBILITY

THE EMERALD NECKLACE-MUDDY RIVER PARKS
AGENCY AREAS OF RESPONSIBILITY MAP
FIGURE 1.3

BOSTON PARKS
 BODY OF WATER
 METROPOLITAN DISTRICT
 COMMISSION
 BROOKLINE
 — BOSTON/BROOKLINE TOWN LINE

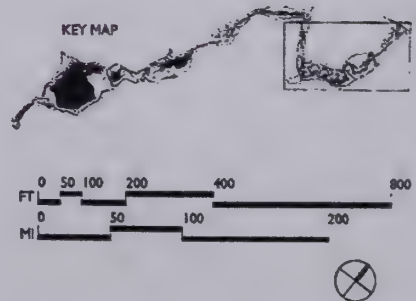


THE EMERALD NECKLACE - MUDDY RIVER PARKS

THE EMERALD NECKLACE-MUDDY RIVER PARKS
THE MUDDY RIVER RESTORATION PROJECT CONTRACT LIMIT LINE
FIGURE 2.1

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- MASSACHUSETTS HIGHWAY DEPARTMENT
- EMERALD NECKLACE-MUDDY RIVER PARKS
- MUDDY RIVER CONTRACT LINE



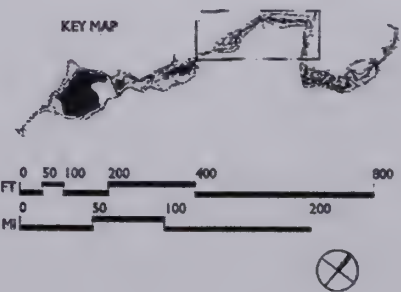
THE EMERALD NECKLACE - MUDDY RIVER PARKS
MUDDY RIVER RESTORATION PROJECT CONTRACT LIMIT LINE

The image is a very faded aerial photograph of a river area. A dark, winding line, likely the Muddy River, runs through the center. The surrounding land is covered with dense vegetation, appearing as a mottled pattern of light and dark green/brown. The overall image quality is poor, with significant fading and low contrast.

THE EMERALD NECKLACE-MUDDY RIVER PARKS
THE MUDDY RIVER RESTORATION PROJECT CONTRACT LIMIT LINE
FIGURE 2.2

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- EMERALD NECKLACE-
MUDDY RIVER PARKS
- MUDDY RIVER CONTRACT LINE



THE EMERALD NECKLACE - MUDDY RIVER PARKS
MUDDY RIVER RESTORATION PROJECT CONTRACT LIMIT LINE



THE EMERALD NECKLACE-MUDDY RIVER PARKS
THE MUDDY RIVER RESTORATION PROJECT CONTRACT LIMIT LINE
FIGURE 2.3

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- EMERALD NECKLACE-MUDDY RIVER PARKS
- MUDDY RIVER CONTRACT LINE



THE EMERALD NECKLACE - MUDDY RIVER PARKS
MUDDY RIVER RESTORATION PROJECT CONTRACT LIMIT LINE

THE EMERALD NECKLACE-MUDDY RIVER PARKS
ETM SECTORS
FIGURE 3.1

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- BOSTON PARKS
 BODY OF WATER
 METROPOLITAN DISTRICT
 COMMISSION
 MASSACHUSETTS
 HIGHWAY DEPARTMENT
 — ETM SECTORS

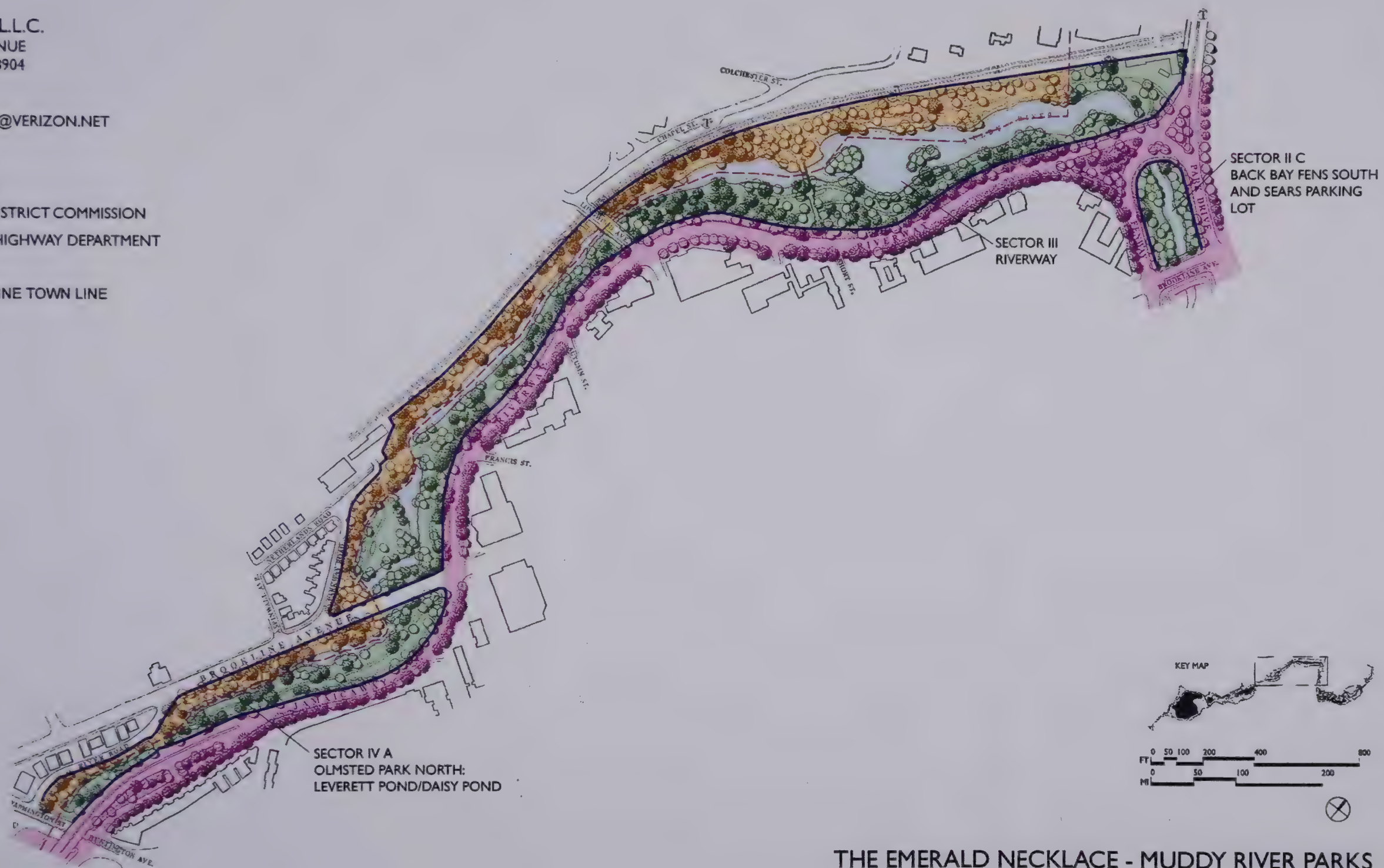


ETM SECTORS

THE EMERALD NECKLACE-MUDDY RIVER PARKS
ETM SECTORS
FIGURE 3.2

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- ETM SECTORS



THE EMERALD NECKLACE - MUDDY RIVER PARKS
ETM SECTORS

THE EMERALD NECKLACE-MUDDY RIVER PARKS
ETM SECTORS
FIGURE 3.3

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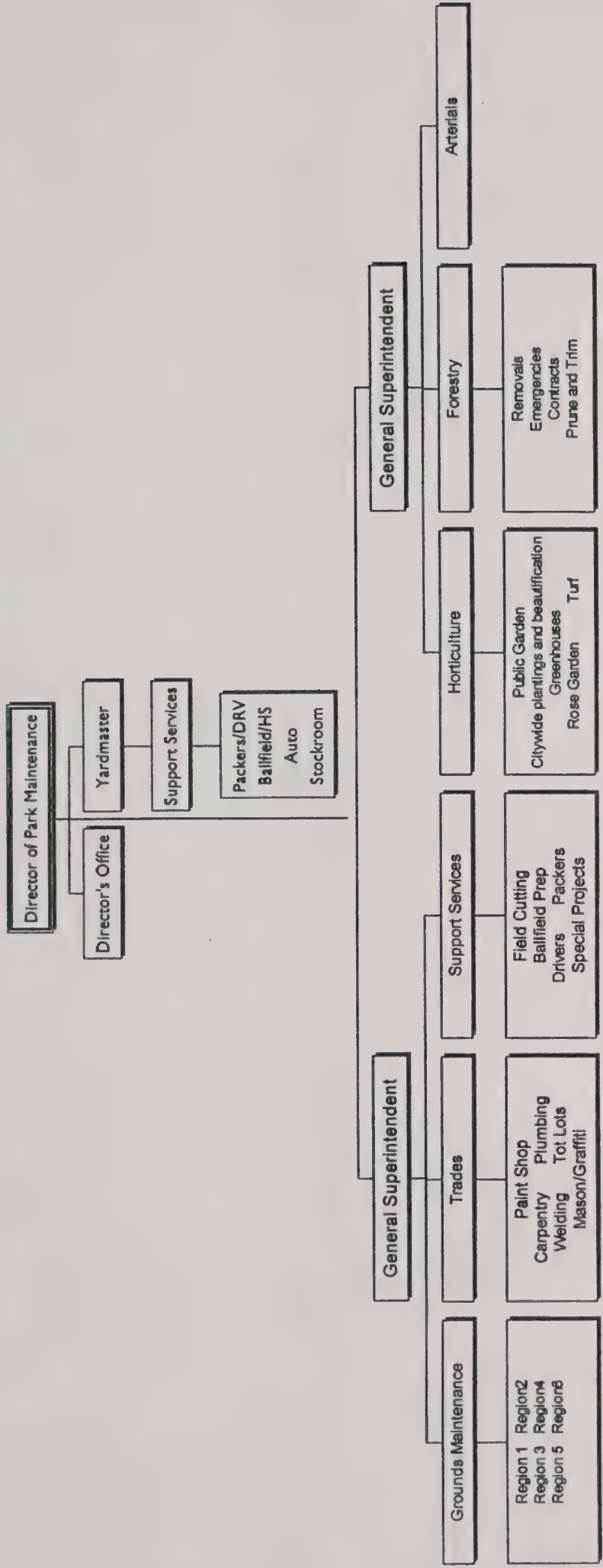


THE EMERALD NECKLACE - MUDDY RIVER PARKS
ETM SECTORS



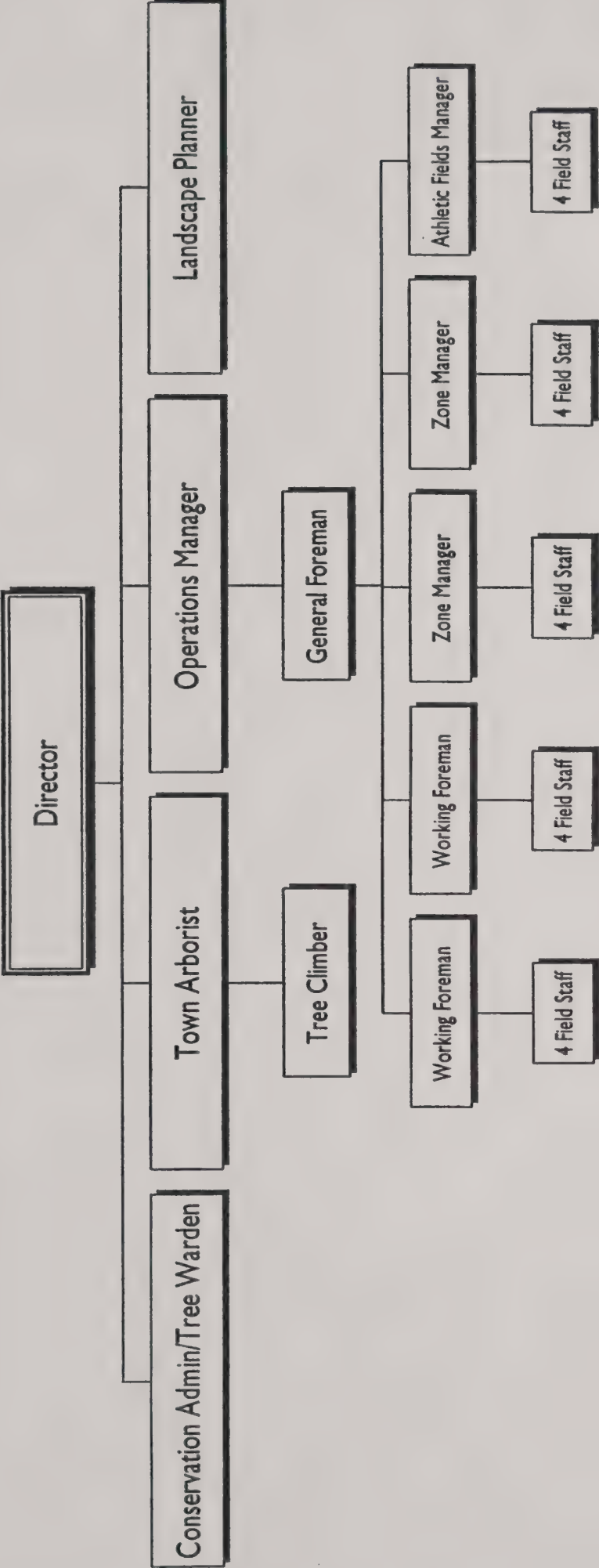
BOSTON PARKS & RECREATION
FIGURE 4.1

Boston Parks & Recreation (Figure 4.1)



BROOKLINE PARKS & OPEN SPACE DIVISION
FIGURE 4.2

Brookline Parks & Open Space Division (Figure 4.2)



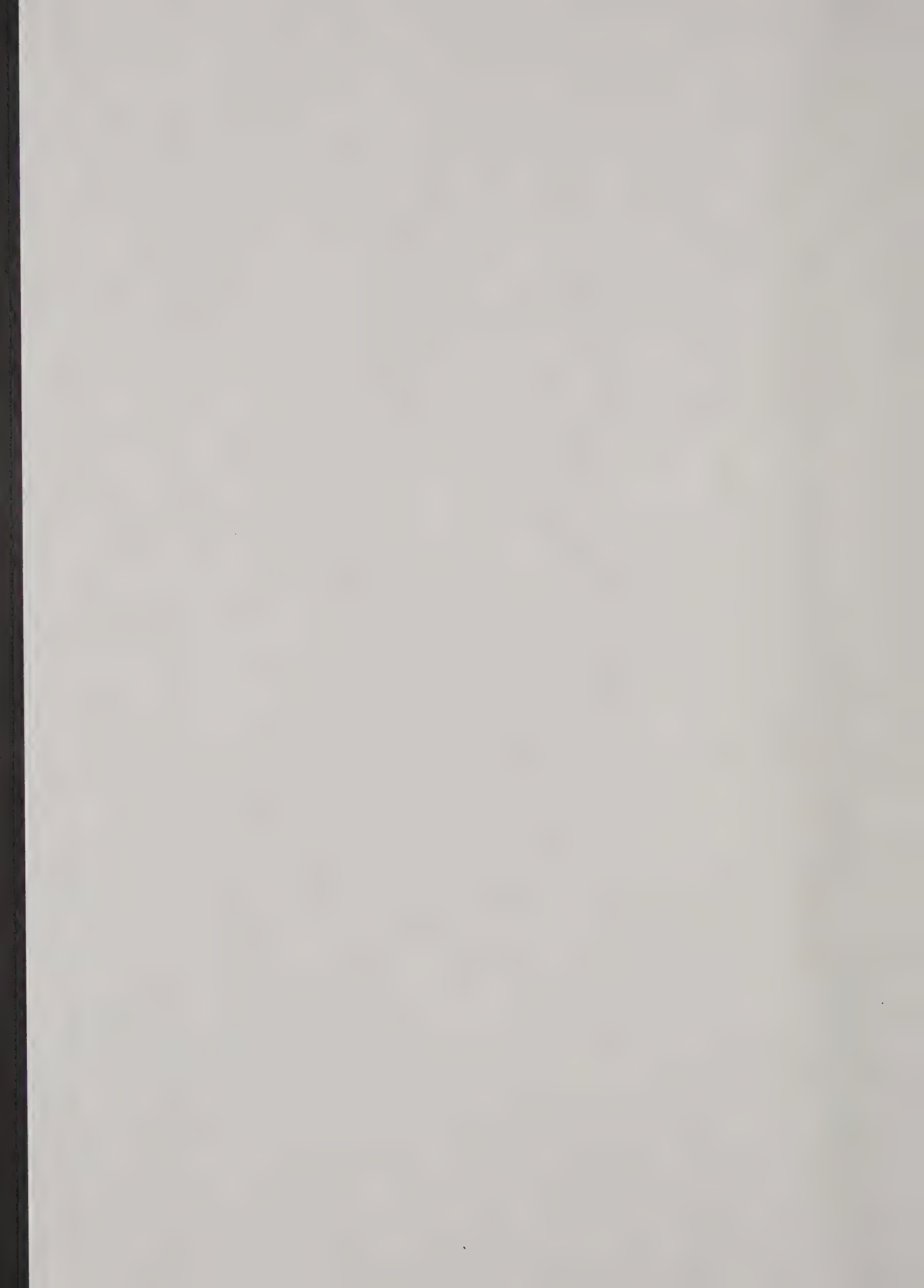
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Appendix
K

APPENDIX K

COMMENT LETTERS AND RESPONSES

(Comments are summarized in table with responses. Copies of comment letters with letter designation are included behind table.)



LETTER A –ENF CERTIFICATE		
CODE	SUMMARY	RESPONSE
A-1	This Certificate does not require the EIR to analyze the impacts of certain projects identified in the Master Plan attached to the ENF... as the proponent does not intend to move ahead with this work in the near term, and background conditions may change significantly before that work is ready to proceed. The proponent should describe the content and schedule for that work in an annual update ... prior to commencement of the work.	The first annual update on the Muddy River project will be filed one year after the start of construction. This is consistent with the Special Review Procedure and this scope.
A-2	As modified by this scope, the EIR should conform to the general guidance for outline and content contained in section 11.07 of the MEPA regulations.	This DEIR conforms to the general guidance for format and content in Regulation 11.07; addresses specific items raised in the Secretary’s Scope and comments from others.
A-3	The EIR should also reprint the comment letters received on this project and address the issues raised in them, to the extent that the comments are within the subject matter jurisdiction of MEPA.	This section of the DEIR contains copies of all ENF comment letters which have been annotated and for which individual responses are provided.
A-4	The proponent should circulate the EIR to any state agencies from which it will seek permits and approvals, and to those parties listed at the end of this Certificate as having written comments.	The DEIR Distribution list is attached to the transmittal letter.
A-5	...the EIR should expand on the alternatives analysis included in the ENF.	A discussion of alternatives is provided in Section 2 – Project Alternatives.
A-6	The EIR should analyze the no-action alternative to establish baseline conditions.	The analysis of alternatives (Section 2) includes a No Build alternative.
A-7	The EIR should include a brief discussion of each state permit or agency action required for the proposed project. The EIR should discuss how the project will meet the	Section 9 – Statutory and Regulatory Standards and Requirements, contains a description of each permit required. Performance standards and other requirements are described.

**EMERALD NECKLACE ENVIRONMENTAL IMPROVEMENTS MASTER PLAN AND PHASE I MUDDY RIVER FLOOD
CONTROL, WATER QUALITY, HABITAT ENHANCEMENT, AND HISTORIC REHABILITATION
DRAFT ENVIRONMENTAL IMPACT REPORT**

	requirements and standards of each permit.	
A-8	The EIR should identify specifically which proposed actions are intended to prevent or minimize flooding.	See Section 2 – Project Alternatives and Section 5 – Project Design and Construction
A-9	[The EIR] should describe the potential impacts of flood control activities and impacts that have been considered that would avoid or minimize damage from flood control activities.	See Section 2 – Project Alternatives, Section 5 – Project Design and Construction, and Section 6 – Assessment of Impact/Environmental Consequences
A-10	[The EIR] should quantify additional floodwater storage capacity to be gained by each area of the proposed dredging intended to add flood storage capacity.	See Section 2 – Project Alternatives, Section 5 – Project Design and Construction, and Section 6 – Assessment of Impact/Environmental Consequences
A-11	[The EIR] should identify the locations of additional storage capacity areas.	See Section 2 – Project Alternatives
A-12	Where the project proposes clearing or expanding culverts, the EIR should specify the activities to be undertaken and the benefits projected to be gained.	See Section 2 – Project Alternatives, Section 5 – Project Design and Construction, and Section 6 – Assessment of Impact/Environmental Consequences
A-13	The EIR should include the sequence in which flood control projects will be implemented and should describe the criteria used to assign priority to flood control projects.	See Section 2 – Project Alternatives, Section 5 – Project Design and Construction, and Section 6 – Assessment of Impact/Environmental Consequences
A-14	The EIR should describe in detail measures that will be undertaken to improve water quality. It should identify specific measures to be implemented and their locations.	Water quality measures are described in Sections 2, 5, and 6
A-15	[The EIR] should indicate the sequence in which they will be implemented and should relate that sequence to the schedule for dredging to ensure that sedimentation prevention measures are in place prior to sediment removal.	Sequencing of water quality measures and their relationship to proposed construction are discussed in Sections 5 and 7.
A-16	[The EIR] should describe potential impacts that may result from implementation of any stormwater or water quality improvements.	Such impacts are described in Section 6.
A-17	The EIR should include a comprehensive maintenance	See Section 8 – Management and Maintenance Plan

CONTROL, WATER QUALITY, HABITAT ENHANCEMENT, AND HISTORIC REHABILITATION
DRAFT ENVIRONMENTAL IMPACT REPORT

PAGE 3 OF 56

	management plan to be implemented by Boston and Brookline throughout the watershed of the Muddy River to ensure continuing effectiveness of any stormwater or water quality improvement measures and prevent new siltation, and it should specifically identify funding sources for on-going, long term implementation of the maintenance plan.	
A-18	The EIR should identify all wetland resources areas, including riverfront area and buffer zones and delineate them on a reasonably scaled plan.	See Section 4 - Existing Conditions and Appendices B – Wetland Delineation and I – Preliminary Design Report.
A-19	The EIR should identify the significance of the resources, including value to flood control. Storm damage prevention, pollution prevention, and fisheries and wildlife habitat.	See Section 4 – Existing Conditions and Appendix B – Wetland Delineation.
A-20	The EIR should quantify in appropriate units the project's estimated impact on each resource area.	See Section 4 – Existing Conditions.
A-21	[The EIR] should describe the nature of all likely impacts that cannot be avoided, including whether they are temporary or permanent impacts, and including impacts from proposed bridge restoration work.	See Section 6 – Assessment of Impact/Environmental Consequences.
A-22	[The EIR] should provide the information requested in the DEP's comment letter regarding the project purpose(s) to be served by each instance of wetland alteration.	The analysis of wetland impacts of the preferred alternative is structured to respond to the DEP comment on project purpose. See Sections 2, 5, and 6.
A-23	The EIR should describe the potential impacts of the proposed dredging and indicate the location of each area proposed to be dredged.	See Sections 2, 5, and 6 and the Preliminary Design Report in Appendix I.
A-24	[The EIR] should describe the purpose(s) of each area of dredging and alternatives to dredging for each area or groups of similar proposed dredging sites.	Sections 2, 5, and 6 contain discussions of dredging alternatives by location.
A-25	the EIR should compare the benefits of bank-to-bank	See Sections 2, 5, and 6.

**EMERALD NECKLACE ENVIRONMENTAL IMPROVEMENTS MASTER PLAN AND PHASE I MUDDY RIVER FLOOD
CONTROL, WATER QUALITY, HABITAT ENHANCEMENT, AND HISTORIC REHABILITATION
DRAFT ENVIRONMENTAL IMPACT REPORT**

PAGE 4 OF 56

	channel and spot dredging in terms of the goals of the proposed project.	
A-26	Wherever dredging emerges as the preferred alternative, the EIR should analyze a range of dredging techniques, describe the circumstances under which each would be the preferred alternative, and indicate the criteria it is using to select dredging techniques for the project's various dredging areas.	See Sections 2, 5, and 6 as well as the Preliminary Design Report in Appendix I.
A-27	The EIR should clarify the purpose of any overdredging and describe how the project will avoid damage to the clay liner during overdredging.	Sedimentation basins will be dredged as a BMP as described in Section 5. The sediment samples have identified the natural soil layer under the river which is not a clay layer that could be penetrated.
A-28	The EIR should describe in detail how the proponent will manage dredged material. [...] The EIR should analyze various locations [for storage and dewatering] in terms of their technical suitability, impacts on traffic, residents, and historic resources.	Details on the management of dredged materials are provided in Sections 5, 6, and 7 as well as in the Preliminary Design Report in Appendix I.
A-29	[The EIR] should describe the proponent's plans for identifying and managing contaminated sediments, including proposed testing and on-site treatment and techniques for segregating contaminated sediments.	The results of sediment testing are provided in Appendix F and information on the management of dredged materials is provided in Sections 5, 6, and 7 as well as in the Preliminary Design Report in Appendix I.
A-30	The EIR should identify landfills that may be able and willing to accept dredged material from the project. As recommended by DEP, the EIR should include appropriate out-of-state landfills.	In and out-of-state options for landfill disposal are discussed in Sections 2, 4 and 5.
A-31	The EIR ...should describe the methodology and results of the demonstration project and indicate how those results will inform the alternatives analysis for <u>Phragmites</u> control in the project.	The black plastic demonstration project on control of <i>Phragmites</i> did not result in any control of the plant. As noted in Sections 2, 5, and 6, dredging and excavation of the <i>Phragmites</i> is the alternative that is included in the Project. See Section 7 for long-term controls.
A-32	[The EIR] should describe the purpose and potential impacts of any proposed <u>Phragmites</u> control activities.	See Section 6 which contains the impacts of the proposed control of <i>Phragmites</i> .

A-33	[The EIR] should describe alternatives considered and explain why any alternatives are no longer under consideration. It should provide information related to the projected effectiveness of the preferred alternative (which is described in the ENF ... as dredging).	See Section 2 – Project Alternatives.
A-34	[The EIR] should also describe the maintenance plan to be implemented to ensure that <u>Phragmites</u> , however it is removed, does not return.	See Section 8 – Management and Maintenance Plan.
A-35	[The EIR] should identify funding sources for implementing the maintenance plan.	See Section 10 – Funding Strategy
A-36	Throughout the ENF there are references to activities to be undertaken to improve wildlife habitat. The EIR should identify which activities are intended for what purpose and document what improvements to wildlife habitat will result from these activities, what impacts --whether positive or negative -- are likely to result from those activities and what alternatives have been considered that may avoid or minimize impacts from these activities.	Sections 4.0 - Existing Environment, and 6.0 Environmental Impacts, contain an analysis of the existing ecological functions and values that would be derived from each alternative. Section 9.0 - Regulatory Compliance contains an analysis of the benefits/negative impacts of the proposed alternatives versus the project objectives and various regulatory interests/standards.
A-37	The EIR should describe the steps that the project will take to avoid impacts to rare species.	Discussions and a field trip were held with the Natural Heritage Program. Based on these discussions, habitat enhancement is proposed for the three spine stickleback (see Section 7.0 - Environmental Mitigation). Discussions and a field trip were held with the Natural Heritage Program. Based on these discussions, habitat enhancement is proposed for the three spine stickleback (see Section 7.0 – Environmental Mitigation).
A-38	The proponent should consult with NHESP during the development of the EIR.	NHESP was consulted as directed by the Secretary. See Section 7 – Environmental Mitigation and Appendix K – Regulatory and Agency Correspondence.

**EMERALD NECKLACE ENVIRONMENTAL IMPROVEMENTS MASTER PLAN AND PHASE I MUDDY RIVER FLOOD
CONTROL, WATER QUALITY, HABITAT ENHANCEMENT, AND HISTORIC REHABILITATION
DRAFT ENVIRONMENTAL IMPACT REPORT**

A-39	The EIR should describe the landscape restoration project in great detail, including the proposed sequence of restoration projects and plans that demonstrate at least a conceptual level development.	See Sections 5 and 6 and the Preliminary Design Report in Appendix I.
A-40	The EIR should identify any impacts on historic resources – whether positive or negative – that may result from the implementation of this project, as well as any alternatives that have been considered that may avoid or minimize damage to historic resources.	See Sections 2, 5, 6, and 7 as well as Appendix I – Preliminary Design Report.
A-41	The Massachusetts Historical Commission (MHC) has requested information regarding the potential impact of changes in water level on river banks and vegetation regarding the age of the underwater stop log structure proposed to be removed.	Meetings and a site tour were held with MHC and representatives from the Brookline Preservation Commission and the Boston Landmarks Commission.
A-42	The proponent should work with MHC on these questions, and on any others MHC may have, as well as with the Brookline Preservation Commission and the Boston Landmarks Commission, to ensure that the project avoids damage to historic structures.	Meetings and a site tour were held with MHC and representatives from the Brookline Preservation Commission and the Boston Landmarks Commission.
A-43	The EIR should describe the proposed improvements [to pedestrian, bicycle, and automobile circulation] in greater detail, including the proposed sequence of circulation improvement projects and plans that demonstrate at least a conceptual level development and include proposed stormwater management improvements in roadways and pathways.	The project is not expected to significantly alter the existing pedestrian, bicycle, and transportation system through the study area. The proposed truck route designations and access/egress plans at each staging area minimize the impact of the project on the existing system. Moreover, the limited truck trips for the removal of dredged materials will result in minimal additional traffic. Impacts from the daylighting and mitigation are provided in Sections 6 and 7.
A-44	[The EIR] should describe potential impacts on the environment of the proposed circulation improvements, alternatives that have been considered, and the sequence in	The project is not expected to significantly alter existing vehicular circulation. The EIR documents the traffic flow impacts caused by the planned temporary roadway closures at Agassiz Road and Netherlands

A-45	which the improvements are proposed to be undertaken. The EIR should detail the proposed activities in the Charlesgate area, their likely impacts on the environment, any alternatives ...that have been considered and an analysis of those alternatives, a schedule, and proposed mitigation measures for any damage to the environment that may occur.	Road while these roads are being used as staging areas. A detailed description of proposed activities is provided in Sections 2, 5, 6, and 7.
A-46	[The EIR] should include a construction mitigation plan, particularly regarding traffic impacts.	Mitigation during construction is addressed in Section 7.
A-47	[The EIR] should include site plans at an appropriate scale showing the boundaries of the proposed project area, as well as wetland resources and their buffer zones.	See Appendix B – Wetland Delineation and Appendix I – Preliminary Design Report.
A-48	[The EIR] should include all information that the proponent will be required to provide to the Federal Emergency Management Agency (FEMA) for its review of this part of the project [i.e., Charlesgate].	These agencies are on the EIR Circulation List.
A-49	...the proponent will have to satisfy DEP and other permitting agencies that this phase can be permitted separately. The Draft EIR should contain a proposed Section 61 Finding relative to this phase.	Draft Section 61 Findings for Charlesgate are provided in Section 7.
A-50	The EIR should describe impacts likely to result from project construction and steps taken to avoid or minimize construction impacts.	Impacts and mitigation during construction are addressed in Sections 6 and 7, respectively.
A-51	[The EIR] should describe in detail the measures that the proponent will take to protect historically and environmentally significant landscape features and vegetation.	See Sections 4, 6, and 7 for information regarding the presence of historic features and potential impacts and proposed protective measures of historic features.
A-52	[The EIR] should also describe potential impacts on traffic and recreational use of the parks, especially during the	Mitigation during construction, including dredging, is addressed in Sections 6 and 7.

**EMERALD NECKLACE ENVIRONMENTAL IMPROVEMENTS MASTER PLAN AND PHASE I MUDDY RIVER FLOOD
CONTROL, WATER QUALITY, HABITAT ENHANCEMENT, AND HISTORIC REHABILITATION
DRAFT ENVIRONMENTAL IMPACT REPORT**

PAGE 8 OF 56

	dredging portion of the project, and steps that will be taken to avoid or minimize these impacts wherever feasible.	
A-53	The EIR should describe steps that the proponent will create to minimize the projects adverse impacts on air quality, including ensuring the use of retrofitted construction equipment.	See Section 7 – Environmental Mitigation.
A-54	...the EIR should describe in detail the proponent's maintenance management plan for maintaining the restored condition of the Muddy River and the Emerald Necklace parks. ...these plans will include a commitment to a detailed schedule, including an ongoing annual schedule, of best management practices to create and maintain high quality stormwater runoff....	A detailed description of the proposed maintenance and management plan is provided in Section 8.
A-55	[The EIR] should describe ongoing measures to prevent the recurrence of invasive vegetation that has been removed.	Section 8 – Management and Maintenance contains procedures for the control of invasive vegetation.
A-56	[The EIR] should include commitments to maintain the restored historic landscape and structures.	A detailed description of the proposed maintenance and management plan is provided in Section 7.
A-57	[The EIR] should include protocols for regular monitoring of environmental conditions to provide a continuous feedback loop by which the effectiveness of management practices can be measured.	A detailed description of the proposed maintenance and management plan is provided in Section 7.
A-58	[The EIR] should define the proportional financial responsibilities if the City of Boston and the Town of Brookline for all short-term and long-term maintenance and monitoring measures.	The cost estimate is provided in Section 5 and the Funding Strategy is contained in Section 10.
A-59	The EIR should include a summary and appropriate commitments for each project impact within MEPA jurisdiction described in the EIR. This section should form the basis for the Proposed Section 61 Finding which will	Commitments for environmental mitigation that are outside of the enhancement/mitigation efforts that are part of the scope of the proposed project, are contained in Section 7 – Environmental Mitigation.

CONTROL, WATER QUALITY, HABITAT ENHANCEMENT, AND HISTORIC REHABILITATION
DRAFT ENVIRONMENTAL IMPACT REPORT

appear in the Final EIR.		LETTER B – SPECIAL PROCEDURE CERTIFICATE	
B-1	Annually following commencement, the proponent will file with the MEPA Office and circulate to commenters on the ENF or EIRs, an update detailing the status of physical improvements and management practices, and summarizing monitoring information on current environmental conditions in the Emerald Necklace, particularly on the Muddy River. These updates will replace any notice of project change that might otherwise be required to be filed du to lapse of time in carrying out the project... The EIR should include a proposed Scope for the first such update.	See Sections 1, 7 and 9.	
B-2	The proponent will ordinarily submit a draft of any review document called for in the special review procedure to the CAC at least one month prior to filing the review document with [MEPA].	A preliminary draft of this DEIR has been provided to and reviewed with the CAC.	
B-3	The CAC may suggest changes or additions to the review document and may file its comments with [MEPA] prior to or when the proponent files the review document. The proponent will provide administrative support to the CAC.	As the result of extensive coordination with the CAC, the proponent has supported the CAC, has presented extensive detail to the CAC and has received comments that prompted changes to the project design.	
LETTER C –JOE BARTON			
C-1	The projected Master Plan for the Back Bay Fens section of the Emerald Necklace does not even describe this treasure or the important role that it plays in the abutting community as well as the larger urban community. No one has determined what characteristics of this area has produced such a bounty of wildlife.	An analysis of wildlife habitat was conducted as part of this DEIR. See Section 4 – Existing Conditions for detail.	
C- 2	There has been no hydrology model to argue the absolute	The hydrology and hydraulic model was prepared for EOEa and is	

**EMERALD NECKLACE ENVIRONMENTAL IMPROVEMENTS MASTER PLAN AND PHASE I MUDDY RIVER FLOOD
CONTROL, WATER QUALITY, HABITAT ENHANCEMENT, AND HISTORIC REHABILITATION
DRAFT ENVIRONMENTAL IMPACT REPORT**

PAGE 10 OF 56

	necessity of this work.	included in Appendix E.
C-3	At the times when the reeds have been absent due to fire, defoliation, or manual cutting, the visual impacts on the park has been tremendous. There is the noise of the cars on the roadways, which would normally be buffered by the reeds. The constant movement of cars in the distance catches the eye and distracts one from the natural setting. When the reeds are gone the smell of water is overwhelming. The reeds play an essential role in cleaning the water and controlling the odor. Complete removal of all the reeds at one time will destroy our ability to use and enjoy this park.	Replacement plantings will be layered in order to provide a screen. Water quality will be improved by dredging and by implementation of BMPs. See Sections 5, 6, and 7 for further information.
C-4	If this foolish undertaking can't be stopped, it should be a requirement to remove alternating sections of reeds , which offset with sections removed from the opposite bank.	The comment is noted.
C-5	We need to have hydrology studies done to determine whether the specified dredging will result in a riverbed that can be sustained given the flow rate of this river.	Sustaining the riverbed is the goal of BMPs discussed in Section 5. A river geometry designed for passing flood storms will naturally settle materials at low flows, so material needs to be prevented from entering stream.
C-6	The most conservative approach would be to daylight the constricted areas of the river to find out what configuration the riverbed would take. Wait five years after daylighting and then dredge. Clearly daylight at the former Sears parking lot to the top of Fens Pond and from Fens Pond through Higginson Circle should be the highest priority	Daylighting will increase the flow of water through this area. Dredging without delay is necessary because river flow velocity will also increase and will result in the movement of existing sediments to downstream locations and possibly exacerbate downstream conditions.
C-7	Also a large culvert at Storrow Drive where the Muddy River flows into the Charles is needed to restore the natural flow of the river.	The EOEa report in Appendix E – Flood Analysis did not show the need for enlarging this particular culvert.
C-8	It is not clear from any of the information that has been made public, what the configuration of the river will be after	The riverbed will not move and the shoreline will be restored to the Primary Period of Significance wherever disturbance during dredging

	the proposed dredging.	allows.
LETTER D – BOSTON GREENSPACE ALLIANCE/FRIENDS OF THE MUDDY RIVER		
D-1	Staging areas for the Emerald necklace restoration will be a problem and there needs to be a team of people charged with managing the contractors and protecting park land from unnecessary degradation.	The selection of staging areas was carefully reviewed with the CAC and the public. The selection process included weighing the impacts of addition or diverted traffic, potentially closed roadways, the proximity of the staging areas to the dredging activity, continued pedestrian passage, and others. This is described in Sections 2 and 5.
D-2	Staging areas should be paved surfaces such as the areas between Boylston Street and Brookline Avenue near the Fenway which have been slated for redevelopment.	It may not be necessary to pave the staging areas. Paving only those portions where trucks pass and polymers and fuel are stored for spill control, may be the only areas that are to be paved.
D-3	In cases where heavy equipment must impact park land, restoration should be meaningful, including aeration of the impacted land areas.	All disturbed areas will be rehabilitated with the Primary and Secondary Periods of Significance acting as guides. Aeration will be specified in all areas being compacted.
D-4	We are concerned about the conservation of natural and wildlife resources of the park.	Natural habitats will be enhanced through the completion of the project. These are described in Sections 4, 6, and 7.
D-5	Exceptional trees should not be removed from the Netherlands Road “island” area and this was agreed to in meetings with citizens.	The Riverway from Rt. 9 to Sears has had all heritage trees identified and will not be removed.
D-6	Also, this section [i.e., of the ENF] has a curious reference to the desirability of using trees with a “weeping” growth form. We have never seen weeping willows in the Riverway or cannot remember seeing them elsewhere in the Emerald necklace.	Willows are on the F.L.O. list.
LETTER E – BOSTON REDEVELOPMENT AUTHORITY		
E-1	The EIR should examine the function of the Phragmites in the Muddy River system, the impact of their removal on wildlife habitat, sediment trapping, etc., and the benefits of new replacement plantings.	See Sections 4, 6 and 7 and Appendix D for an analysis of the <i>Phragmites</i> .

EMERALD NECKLACE ENVIRONMENTAL IMPROVEMENTS MASTER PLAN AND PHASE I MUDDY RIVER FLOOD
CONTROL, WATER QUALITY, HABITAT ENHANCEMENT, AND HISTORIC REHABILITATION
DRAFT ENVIRONMENTAL IMPACT REPORT

E-2	The EIR should describe the types of vegetation recommended for planting and their appropriateness to the historic Fens parkland. The addition of any wetlands plantings also should be described and evaluated.	Plant lists are provided in Section 6. This will include wetland species lists as well as F.L.O. lists from the Primary Period of Significance. Landscape plans in Appendix I – Preliminary Design Report contain massing diagrams for high, medium and low shrubs, groundcovers, trees and wetland plants. These categories were established by F.L.O. and we are following his massing techniques and utilizing
E-3	The EIR should report on the current conditions and describe the corrective actions to be taken to resolve these problems and prevent future problems.	Current Conditions are described in Section 4; the recommended plans are described in Section 5 and future maintenance in Section 8.
E-4	Proposed curb settings of the roadways bordering the parkland should be described. Reportedly, at least in some areas, low curb settings have been proposed which would result in sheet flow from the roadways during rainstorms into the parkland and watercourses. ...This needs to be examined in the EIR, its impacts evaluated, and best management practices to prevent any adverse impacts described.	Poor curb conditions are noted in Appendix C showing existing conditions. Repair of these problems is part of structural BMP discussion in Section 5.
E-5	[...] we do have some concerns that the restoration of the waterway [in the Sears parking lot], which would remove the current restrictions of the culverts, may need to take place early in the restoration, along with the Charlesgate area improvements, in order to prevent potential flooding should a major storm occur. The EIR should address this issue and also should evaluate alternative staging/dewatering areas.	Staging of construction is discussed in Section 5. Staging and dewatering areas are evaluated and screened in Section 2 and the proposed use of staging areas is described in Section 5.
E-6	The EIR should describe the post-construction monitoring and maintenance program to maintain the water quality and flow enhancement of the proposed Muddy River improvements, including best management practices,	See Sections 5, 7, and 8.

CONTROL, WATER QUALITY, HABITAT ENHANCEMENT, AND HISTORIC REHABILITATION DRAFT ENVIRONMENTAL IMPACT REPORT

	maintenance of preferred vegetation, removal of evasive species, periodic mowing, etc.	
E-7	While we have concentrated our comments on the Phase 1 EIR, we would expect that the Master Plan EIR would take a more universal look at the environmental impacts of the total Emerald Necklace Improvements project and would provide the general context in which the Muddy River dredging could be evaluated.	The structure and content of the EIR complies with the requirements of the Secretary of Environmental Affairs and has been reviewed with the MEPA Office and the Army Corps of Engineers.
E-8	The master Plan should discuss, <u>inter alia</u>, comprehensively and in detail, the background and history of the development of the Master Plan and the various alternative approaches that have been considered over the years, the positive and negative aspects of these alternatives, and the reasons for their acceptance or rejection.	Section 2 discusses current treatments for cultural and historic landscapes, as well as legislation and national standards. The treatment objectives have not changed since the 1989-90 Emerald Necklace Master Plan. The proposed treatments are consistent with NPS standards and definitions.
E-9	The EIR should discuss the public involvement in the development of the Plan and the program for continued public participation and outreach during the implementation of the Plan, including the formation of a Citizen's Advisory Committee.	See Section 3 – Public/Agency Involvement as well as Appendix L – CAC and Public meeting Material.
E-10	Similarly, the involvement of State and Federal agencies over the years, including the Corps of Engineers, the U.S. Environmental Protection Agency, the Massachusetts Department of Environmental Management, and others, should be discussed, and their several studies for improvements and flood control should be evaluated. Sources of funding should be identified.	See Section 3 – Public/Agency Involvement as well as Appendix L – CAC and Public meeting Material.
E-11	[The Master Plan]EIR also should examine the impact of combined sewer overflow discharges and other drainage discharges- legal and illegal- that have affected the Muddy	The findings of project-conducted water quality monitoring that was conducted during the fall/early winter of 2000, are in Appendix G and Section 4.0. A BMP Plan was prepared based in these and other

EMERALD NECKLACE ENVIRONMENTAL IMPROVEMENTS MASTER PLAN AND PHASE I MUDDY RIVER FLOOD
CONTROL, WATER QUALITY, HABITAT ENHANCEMENT, AND HISTORIC REHABILITATION
DRAFT ENVIRONMENTAL IMPACT REPORT

	River System and their mitigation or elimination.	findings and is presented in Section 5.0
E-12	As with the Phase I EIR, the Master Plan EIR should discuss the long-term monitoring and maintenance of the improvements and enhanced environmental quality of the Emerald Necklace.	See Section 7 – Management and Maintenance Plan.
LETTER F – BOSTON WATER AND SEWER COMMISSION		
F-1	[...] the proponent’s bank-to-bank dredging will achieve water quality benefits that will not be achieved by channel dredging. The proponent should compare bank-to-bank dredging with channel dredging with respect to water quality benefits, costs, and the amounts of materials to be removed.	The benefits and necessity of bank to bank dredging and the removal of <i>Phragmites</i> are discussed in Section 6.0 and the costs are contained in Section 5.0. There are clear ecological benefits to be realized from the removal of all contaminated sediment and planting wetland, shoreline and upland plantings
F-2	The proponents should also identify their assumptions about the quality of the dredged materials and where these materials will be disposed of.	Sediment quality and disposal options are presented in Appendix F.
F-3	In addition to dredging, the proponents propose to replace existing culverts and remove obstructions under the bridges along the lower portion of the river. These improvements [...] should be discussed in more detail.	Conceptual plans are presented in Appendix I and proposed project elements are described in Sections 2 and 5.
F-4	The Bussey Brook CSO [...] is not a combined sewer overflow, but an overflow from a sanitary sewer belonging to the Massachusetts Resources Water Resources Authority (MWRA). Additional information about the structure should be obtained from the MWRA.	Acknowledged, Bussey Brook is included in the hydraulic model of Stony Brook and is not a CSO. There have been overflows into Bussey Brook from backups in nearby sewers but not CSO overflows.
LETTER G – BROOLINE VILLAGE ACTION GROUPS		
G-1	It is unclear how Phase 1 improvements as proposed will eliminate severe flooding when Gate 1 and 2 of the Stony	The stormwater infrastructure improvements take into account Stony Brook overflows as discussed in Appendix E.

	Brook outfall is proposed to be "open" to allow flows into the Back Bay Fens basin waters. Stony B. is a combines storm drain/sewer.	
G-2	This plan can only result in more water volume to the Fens watercourse, at an accelerated rate in any storm event and the polluted Stony Brook flow from the CSO will include raw human sewage and other toxic contaminants.	The Muddy River is an integral hydraulic element to the Stony Brook Conduit discharge and cannot be removed without causing flooding. Improvements in the Muddy River will allow sufficient flow to reduce flooding in both channels. The Stony Brook conduit is ongoing and will improve water quality and will increase volume flowing through the Fens and Charlesgate. The hydraulic modeling, see Appendix E, takes this into account.
G-3	While the "open gate" plan may relieve flooding at Northeastern and Wentworth the added flow and increased surface level in Fens Basin ... will cause new flood problems in the adjacent environs.	See response to G-1.
G-4	Dredging new channels may increase the Fens Basin holding capacity, but the water level in the Basin will adjust to the same water surface elevation as the Charles River.	The Charles River dam does control water level in the Muddy River. However, the increased channel capacity is required to pass flood flows as discussed in Appendix E.
G-5	Dredging the Basin will not prevent flooding in the Fens lower reaches.	See response to G-4.
G-6	To open the Boston Gates 1 and 2 and allow contaminated waters to enter the Fens Basin from the Stony Brook would be a step backwards in time and a major mistake. Olmsted faced the same problem 100 years ago. The answer, beyond tidal flushing, was to divert the Stony Brook sewer and storm flow to the Charles R. and the treatment facility closing the gates 1 and 2 at the outfall near Northeastern and the [MFA].	See response to G-1.
G-7	Presently, in periods of high flow, the foul flow overtops the gates 1 and 2, delivering the flow to the Fens System, but at	See response to G-1.

EMERALD NECKLACE ENVIRONMENTAL IMPROVEMENTS MASTER PLAN AND PHASE I MUDDY RIVER FLOOD CONTROL, WATER QUALITY, HABITAT ENHANCEMENT, AND HISTORIC REHABILITATION
DRAFT ENVIRONMENTAL IMPACT REPORT

	the same time, when the foul flow conduits to Charlesgate East are full and cannot discharge to the Charles or continue flowing through the East Gatehouse into the transmission conduit to the treatment facility, a backup through the sewer lines occurs causing flooding flow to Northeastern, Museum of Fine Art[s], Wentworth [College] and flooding further upstream beyond Ruggles Street, along the Stony Brook Conduit to the Archdale Area and beyond.	
G-8	Focused study and modification of the CSO outfall to the Charles river #023, may be a more direct solution to the flooding along the Stony Brook System and at the same time avoid contaminating and flooding the Back Bay Fens open waters in the lower reaches.	Current cleaning contracts will increase capacity to the outfall. However, response to G-1 still is critical to overall operation.
G-9	Lowering the water surface elevation to the upstream main stem is not an important factor unless overbank flooding is evident.	Modifications are proposed to lower the water elevation in downstream areas to prevent flooding that will result in also lowering upstream water elevation even if the banks were not topped.
G-10	In [the storms of October 21, 1996 and June 13, 1998] the hydraulic capacity of the River ... was not exceeded.	Hydraulic modeling in Appendix A indicates capacities were exceeded. No contradictory hydraulic model has been presented to dispute findings.
G-11	While it is accurate that the Tannery B[rook] is in a conduit designed to discharge flow from a drainage basin of 410.0 acres, studies have shown no flow from this tributary, even when the river is low. Our observations record Tannery B. waters surcharging from vault A after minor rains as well as during flood events.	Surcharged conditions do not indicate no flow. It is acknowledged that surcharged conditions exist and input flows to the Muddy River.
G-12	Has the Tannery flow been blocked with street sand build up?	This is a maintenance condition that the Town of Brookline needs to address.

G-13	Why would the Tannery conduit at Vault A and a nearby sewer opening surcharge at the same time during storm events, unless of course they were hydraulically connected?	Tannery Brook drain is separated and surcharges during major storms. The nearby sewer no longer is connected to Tannery Brook but still discharges to a combined sewer that is in the process of being separated.
G-14	The Muddy River waters per se, were not involved in the flood of the MBTA 10/21/96 or in the second flood 6/13/98,...	Difficult to make this statement. The level of the Muddy River affects tributaries, contributed a significant amount of flow to the MBTA tunnel.
G-15	It would seem the first priority would be to "fix" the uncontrolled flows in the contributing tributaries rather than rush to squander millions of tax dollars on flawed make work plans to alter the main stem of the waterway to no avail.	It is not clear what is meant by uncontrolled flows. Most tributaries have completed or begun separation work to control sewage discharges. Controlling storm flows through storage is more difficult and addressed in Section 2.
G-16	The lower portion of the waterway is not the Muddy River...It is the Back Bay Fens. The Muddy R. is not connected to the Stony Brook as described.	Comment noted.
G-17	No study data is included to support the claim that the waters of Tannery Brook are prevented from entering the Muddy R. due to the high level of water surface in the river.	The hydraulic gradeline during storms is above the Tannery Brook outlet. This condition causes flooding, which has been reported in this area.
G-18	The Muddy River has not flooded periodically in the past as averred. The claim that the River exceeded the hydraulic capacity is false.	Proponent disagrees with comment as historical references to flooding by communities involved support report statement.
G-19	Other studies concerning the tributaries, Muddy R. main stem and the Back Bay Fens were not cited and obviously have not been used in establishing the basis for this CDM proposal.	CDM's model has subsequently been adopted by ACOE and we are not aware of a similar analysis that contradicts the results presented in the 10/98 EOE report.
G-20	Before embarking on details review in Phase 2 and 3, a more specific description of the entire watershed drainage system, drainage basins, holding ponds, and reservoirs, with measures flow/surge rates and volumes ought to be a part of	Additional current conditions are discussed in Section 4 of DEIR.

**EMERALD NECKLACE ENVIRONMENTAL IMPROVEMENTS MASTER PLAN AND PHASE I MUDDY RIVER FLOOD
CONTROL, WATER QUALITY, HABITAT ENHANCEMENT, AND HISTORIC REHABILITATION
DRAFT ENVIRONMENTAL IMPACT REPORT**

	this kind of [p]roposal...	
G-21	Figure 1 titled Schematic of the Muddy River could be more accurate by adding Seargent Pond and brook flow to Jamaica Pond as well as Daisy Spring flow to Willow Pond.	Flows from these areas are included in the model. However, the upper reaches of the watershed are not modeled in detail because of the low incident of flooding caused by local conditions.
G-22	[...] the Brookline Sewer Main Transmission Line is a separate dedicates conduit (foul flow only) and should not receive any storm water runoff or storm drain overflows at any time. Diversion of storm flows from the Tannery conduit and the Longwood conduit, to the main line sewer would exceed the designed capacity and defeat the purpose of the separate sanitary system, and further, would cause the surcharge and flooding experienced in the [10/96 and 6/98] storm events.	Agree that storm flows should not be diverted to sewer system.
G-23	In Sec. 2, Para.2, the CDM outline of the current flood conditions relies on incomplete information offered by the Town officials and CDM's modeling. No onsite engineering studies were conducted or published.	CDM believes sufficient data was obtained including field verification of cross sections. The current model closely simulates the flood conditions and has been accepted by the Army Corps of Engineers for additional work.
G-24	It has never been shown in prior studies that increasing rates of flow is a benefit in wet weather. In fact flow is only important in the 10 weeks of summer when parts of the main stem dry up or the flow is so sluggish stagnation results and the fishway becomes blocked and oxygen is not replaced.	Intent of comment is unclear. In wet weather flooding conditions, the hydraulic capacity will determine the flow in the river. If the capacity is not sufficient to convey storm flows, then the only solution is to increase capacity or decrease runoff. In dry weather, this capacity may result in sluggish flow.
G-25	No previous studies have shown that upstream flooding, if any is remotely connected or the result of flow constrictions in culverts from the Riverway to Upper Fens Pond. No data is provided in this CDM proposal to support the assumed benefits of culvert removal ("daylighting" the twin conduits at Park Drive.	The calibrated hydraulic model supports the contention that restrictions in the closed conduits significantly contribute to flooding. The model has been reviewed and accepted by the Army Corps of Engineers.

G-26	Opening the CSO's at Gate House #1 will flood the basin with sewage and storm water beyond the basin capacity whether or not the existing channels in the basin are enlarged , as basin high water levels are dependent on water levels in the Charles River which will have high surface levels also, in the same storm event.	The hydraulic model shows that with improvements in the Charlesgate area, there is sufficient capacity to convey Muddy River flows including the anticipated Stony Brook overflows. This conclusion is based on the current water levels in the Controlled Charles River.
G-27	Assuming the 118.6 [maximum elevation upstream of Park Drive during the 10.96 storm event] is accurate and the Tannery conduit top is at 111.9, it is difficult to believe that the 6.7 foot elevation to flood surge level in the main stem would develop a hydraulic pressure sufficient to prevent entry of the Tannery Brook flow.	Tannery Brook still enters the Muddy River under these conditions but with upstream flooding.
G-28	It appears the Village Brook twin conduits, in the same storm and same specifics, had no problem discharging to the main stem open water [w]hile carrying tons of sand as precipitate.	The Village Brook watershed is steeper and, therefore, also still enters Leverett Pond.
G-29	Our studies on site during the 10/21/96 event and prior show no flow at the Longwood Brook and the Tannery Brook drains. The same no flow condition was apparent during the 6/13/98 flooding.	This comment seems to contradict the G-27 statement.
G-30	The Old Tannery CSO "seal" gate was open from the river to manhole in Aspinwall Park, and surcharged in both events, delivering floodwater overland and directly to the Brookline Sewer Transmission Main. (not shown in CDM Fig. 4 pg 11.)	CDM agrees that flooding resulted in a surcharged Tannery Brook and created upstream flooding. This doesn't affect the model results and only confirms the results.
G-31	The Village Brook Flood Relief Conduit at Pearl St/River Road is not shown on CDM Fig 4 (pg11), and integral part of the flood control system apparently presently closed and abandoned.	Construction at Hearthstone Plaza interrupted drain so it is no longer available as relief drain. Portion of the original drain now functions as street drain.

**EMERALD NECKLACE ENVIRONMENTAL IMPROVEMENTS MASTER PLAN AND PHASE I MUDDY RIVER FLOOD
CONTROL, WATER QUALITY, HABITAT ENHANCEMENT, AND HISTORIC REHABILITATION
DRAFT ENVIRONMENTAL IMPACT REPORT**

PAGE 20 OF 56

G-32	The remaining 6 high watermark measurements in Fig.4 seem to indicate constrictions at the Brookline Avenue Gate House, the Fens Pond and Ipswich Street. No measurement is shown for maximum high water in the Charles River during the 10/21/96 event.	Charles River elevation is controlled by the dam operation and the best estimate of conditions during the 1996 storm is that the Charles was at elevation 8.5 BCB.
G-33	No data is offered to indicate the flows to the main stem from the Emanuel Drain or the Stony Brook and Old Stony Brook CSO, or other tributaries carrying local runoff to the lower reaches of the Fens Back Bay System. Obviously, such flows contributed to the volume and the measured high water marks shown in Figure 4, and would continue to contribute whether or not upstream conduits were "daylighted."	Flow from all contributory drainage areas in the basin was included in the model. These flows are not detailed in the report but are included in the model detail.
G-34	We believe, if the retention capacity in the upstream reaches of the main stem is defeated by the open channel – no conduit plan flood waters will rush to the Fens Basin unimpeded and coupled with new additional flows from Stony Brook, will rise well above the 112.0 surface level at Ipswich St. (Charlesgate) measured in the October 26, 1996 flood...	Flood improvements including open channel or daylighting will increase the flows to the Back Bay Fens. These increased flows are evaluated by the model, and improvements in The Fens area account for increased runoff. See Appendix E.
G-35	The CDM proposal fails to consider the conditions in the river during the 10 week dry season in the summer months.	The Charles River determines water elevation in the Muddy River well upstream of the daylighted areas during low flows.
G-36	No flow augmentation plan is offered to prevent stagnation and pathogenic conditions fostering harmful bacteria and virus. Data is missing regarding impact on fish and wildlife and public health.	Flow augmentation is discussed in Section 2.
G-37	"Normal" water surface elevations as shown in Figure 4 appear to be assumed (not supported by actual on site measurements or prior studies).	Normal water surface is controlled by the Charles River and the information was provided by the MDC.

G-38	The premise that the tributaries "cannot" enter the main stem due to high surface levels in the containment is clearly wrong.	The tributaries cannot discharge their required flows due to high surface water in the main stem and results in flooding in the tributaries.
G-39	Referring to Section 5, page 12 in the CDM Proposal... The total cost is shown as \$21,512,659 based on December 1999 construction start.	New cost estimates are discussed in Section 5.
G-40	Permits are listed on page 14, but are seemingly incomplete. The entire water course (Muddy River and Back Bay Fens) is a fishway and spawning ground for the North Atlantic Blue Back Herring and would require permits for the National Marine Fisheries.	The presence of blueback herring is acknowledged. The National Marine Fisheries Service is updated on the Project's plans.
G-41	Comparison costs of alternative proposals are not included in the Camp Dresser and McKee Report.	Alternative proposals are discussed in Section 2. Alternatives not meeting project objectives are not included in cost estimates.
G-42	The proposed dredging from Boston Gate 1 and 2 would not provide additional water volume storage as claimed because it will be at Charles R. level prior to any storm unable to accept new flood volumes whether from the Muddy R, the Emmanuel [sic] Drain or the proposed Gate 1 and 2 outfall from Stony Brook....	See response G-26.
G-43	The Ipswich Street to Charles River channel blockage....should be a first priority stand alone repair project and undertaken forthwith as emergency, separated from any other improvement or new construction proposals.	This improvement is included in the early Charlesgate construction contract.
G-44	Phase 1, the so called "red" plans primary purpose is stated to be "Flood Reduction" but fails to address any problems in the tributaries where flooding took place. Flooding too place along the brooks far from the main stem but no corrective plan is offered	Flooding in the main stem needs to be corrected before flooding in tributaries can be corrected.
G-45	Without considering the non-point pollution and sediment	The proposed project includes Best Management Practices to address

EMERALD NECKLACE ENVIRONMENTAL IMPROVEMENTS MASTER PLAN AND PHASE I MUDDY RIVER FLOOD
CONTROL, WATER QUALITY, HABITAT ENHANCEMENT, AND HISTORIC REHABILITATION
DRAFT ENVIRONMENTAL IMPACT REPORT

	entry to the river system, expenditures of vast sums to clean up the main “drainage ditch” is merely a make work task.	future sedimentation and is discussed in Section 5.
G-46	No alternate system has been adopted to retain storm water and control runoff from the drainage basin to the river.	Flood storage is discussed in Section 2.
G-47	Many studies have been undertaken at the request of various agencies, but none to date offer a “River Management Plan” for the Muddy River Watershed, the Back Bay Fens, or Stony Brook systems	It is unclear what the commenter’s definition of “River Management Plan” includes. DEIR will contain a Management and Maintenance Plan (Section 8) that addresses maintenance of facilities and practices to improve flood conditions.
G-48	Solid and hazardous waste removal, storage and handling is also a major concern, with the focus on public health in and around the water park sites involved.	Education elements of BMPs address wastes in watershed and Appendix F describes handling of contaminated sediments in the main stream.
LETTER H – BROOKLINE CONSERVATION COMMISSION		
H-1	[...] the flood mitigation benefits of dredging need to be preserved through appropriate measures to control future deposition of solids in the river by stormwater, and the investigations of source control methods will be one of the most important parts of the EIR.	Best Management Practices (BMPs) and the Management and Maintenance Plan are included in DEIR in Sections 5 and 8.
H-2	The Town of Brookline needs to ensure that flood mitigation and management be pursued to minimize property damage to the fullest extent feasible. To that effect, the phasing/sequencing of the project should be evaluated carefully.	Phasing and construction of flood improvements are recommended in a downstream to upstream direction so as not to increase flood damage by constructing upper portions first.
H-3	The Commission requests that the EIR consider phasing of the project to provide expeditious flood relief from Brookline. The analysis may indicate that culverts at the former sears Parking Lot area should be addressed following the Charlesgate portion of the project. The costs and benefits of sequencing should be outlined carefully.	Phasing is discussed in Section 5.
H-4	[Non-point] [s]ource controls, including both management	Both non-structural and structural BMPs are described in Section 5.

	practices and structural measures, will need to be recognized and implemented by various responsible parties.	
H-5	The EIR should estimate when, under "base case" conditions involving no source control measures other than those already in place or planned, sediment in the river would return to present its present level.	Sedimentation rates are discussed in Sections 2 and 5.
H-6	It is essential for the EIR to evaluate alternative source controls for feasibility and effectiveness; provide appropriate level of detail concerning siting, design and phasing options; estimate costs; enable the project proponents and others to set priorities among cost effective source controls; and specify what implementation is planned in Boston, Brookline, and Newton.	Same response as H-4.
H-7	Some stormwater sampling may be needed in order to determine which source controls or stormwater management approaches are most appropriate.	Stormwater was sampled and tested and the results and recommendations for future testing are contained in Appendix G and in Section 8.0.
H-8	The EIR should assess runoff from the adjacent parkland areas and from the storm drain systems separately and develop or document suspended solids.	Runoff from storm drains was included in the EIR studies and the results are reported in Section 4.0. The implementation of BMPs to improve stormwater quality is discussed in Section 5.0, and the impacts to water quality are discussed in Section 6.0.

EMERALD NECKLACE ENVIRONMENTAL IMPROVEMENTS MASTER PLAN AND PHASE I MUDDY RIVER FLOOD
CONTROL, WATER QUALITY, HABITAT ENHANCEMENT, AND HISTORIC REHABILITATION
DRAFT ENVIRONMENTAL IMPACT REPORT

H-9	The EIR should document stormwater systems for Boston, Newton, and Brookline, including catch basins, as well as existing or planned stormwater management programs in drainage areas; appendices should include water quality sampling results that are available from storm drain investigations. A routine monitoring program should best established to track pollution levels in the Muddy River and test fecal coliform, dissolved oxygen, pH, and total hydrocarbon levels.	See the response to comment H-9, above.
H-10	[The EIR process should address] [t]he various dredging options most appropriate for use in each area of the river with an analysis based upon factors such as sediment quality, proximity to the Charles River, hydrological conditions, equipment access and resuspension of sediments.	The selection of dredging methodology is discussed in Section 2.
H-11	[The EIR process should address] [h]ow the dredge material will be tested, handled and transported in each section of the river.	Dredge sediment quality and disposal are discussed in Appendix F. Dredge methodology is discussed in Section 2.
H-12	[The EIR process should address] [t]he expected staging sites, and how the project will deal with public safety, noise, and storm emergency procedures.	Staging areas are discussed and screened in Section 2 and the design and impacts and mitigation are discussed in Sections 5, 6, and 7, respectively.
H-13	[The EIR process should address] [m]itigation measures for loss of park use, inconvenience and traffic.	See Section 7 for a detailed discussion of construction mitigation.
H-14	[The EIR process should address][m]onitoring and reporting of pollution levels in dredge material, downstream conditions and wet weather events.	See Section 4 for information on sediment and water quality, Section 7 for water quality monitoring directly associated with construction and Section 8 for a proposed long-term water quality monitoring program.
H-15	[The EIR process should address][w]hat monitoring	See Sections 6 and 7 for a discussion of water quality monitoring

	program will be used to determine impacts to downstream water bodies, and how dredging techniques will be altered should conditions be determined unacceptable.	protocol, impacts, and mitigation, and contingencies.
H-16	The report recommends that Willow Pond be dredged to a depth of six feet. A previous report recommended a depth of four feet. It would be useful to have an understanding of the cost/benefit, in terms of flood capacity and water quality, of different dredge depth in the various ponds, riverway and fens.	Dredge depths downstream of Sear's Parking lot are based on required cross section for flood protection. Upstream of Sears Parking lot cross sections are principally returned to historic cross sections as flood capacity is adequate once downstream problems are corrected.
H-17	If a greater dredge depth is proposed as a means of providing more storage for sediments that will be deposited by stormwater in the future, the costs and benefits of this approach should be compared with those of dredging to a lesser depth, producing that much less sediment for disposal, and implementing source controls that enable more solids to be captured before entering the river in the future.	Sediment settling basins and source control are both discussed in Section 5 as BMPs.
H-18	The project plan for cleaning the conduits should be clearly defined [in the EIR]. The plan should address what work will be done to ensure that the water level in the Fens and upstream areas does not drop during low flow periods as a result of this work, the impacts expected during construction/cleaning and longevity of cleaning benefits.	Water depth during low flows is largely controlled by the Charles River and conduit cleaning would not affect those levels.
H-19	The surface treatments to be used for conduits that are opened and treatment of the material cleaned from the conduits should also be evaluated [in the EIR].	See Section 5.
H-20	A final consideration should be the impact on traffic in these areas.	See Sections 4, 6, and 7 for information on existing traffic, traffic impacts, and traffic mitigation.
H-21	It is important to the Commission that the EIR address impacts on wetlands, wetland replication, wildlife habitat,	See the Preliminary Landscape Design plans in Appendix I and Section 5. The impacts and mitigation are discussed in Sections 6

EMERALD NECKLACE ENVIRONMENTAL IMPROVEMENTS MASTER PLAN AND PHASE I MUDDY RIVER FLOOD
CONTROL, WATER QUALITY, HABITAT ENHANCEMENT, AND HISTORIC REHABILITATION
DRAFT ENVIRONMENTAL IMPACT REPORT

	bank stabilization and replanting	and 7.
H-22	The EIR should address how the bank edges be defined and marked on the ground, how they will be stabilized during construction, the long term stabilization techniques, the types of plantings, on going maintenance, and a contingency plan if bank failures occur.	This information is contained in the preliminary landscape design plans (Section 5) and plant lists that are contained in Section 6. Management and maintenance is discussed in Section 8.
H-23	The EIR should set forth a system-wide phragmites management program that optimally analyzes the benefits of all techniques, including herbicide applications and incorporates re-vegetation. The project should prioritize the removal of phragmites stands within the Riverway and Back Bay Fens to improve flow and protect wildlife habitat. The EIR should include the anticipated monitoring and management of phragmites post-dredging.	The control and monitoring of invasive vegetation is discussed in Section 8. Dredging and <i>Phragmites</i> removal has to proceed in an upstream direction in order to provide the downstream hydraulic capacity. It would be more damaging to improve the upstream hydraulic capacity first without a downstream improvement.
H-24	The EIR should carefully consider park continuity and bicycle and pedestrian benefits, with reference to both Netherlands Road and Route 9, explaining the status of any plans by the Metropolitan District Commission to create a new bicycle crossing at Route 9 pursuant to the study completed by Bruce Campbell and Associates during the early 1990s.	The MDC reports that it is committed to make improvements at Route 9. However, these improvements are not in the present Capital Budget. Funding is being sought as soon as possible. There are no plans for Netherlands Road.
H-25	Closure of the Netherlands Road would also have traffic and other impacts that need to be carefully studied...and the EIR should look closely at those impacts.	The impacts to traffic flow caused by the planned roadway closures at Agassiz Road and Netherlands Road while these roads are being used as staging areas are discussed in Section 6 and the traffic mitigation is discussed in Section 7.
LETTER I – EDWARD J. BURKE		

I-1	[..concerned with] [t]he lack of notice to the general public.	Mandated public notice requirements under MEPA were complied with in the ENF and DEIR. Also, see Section 3 and Appendices K and L for a detailed listing of additional public outreach efforts that were undertaken.
I-2	The dredging priorities should be: • Removal of obstruction at Ipswich Street at Mass Pike • Daylighting of the Sears Parking Lot and Fens Pond from Brookline Ave to Higginson Circle. • Increase the capacity of culvert, Muddy River at Storrow Drive.	Construction phasing is discussed in Section 5. The capacity of the culverts at Charles River is sufficient to pass storm flows.
I-3	The sites mentioned for dewatering are unacceptable	Staging areas for dredging are discussed in Section 2 and impacts of project discussed in Section 6. The proposed staging areas were selected after a detailed review with the CAC and public presentation.
I-4	Before dredging begins, the river bank boundaries must be established. The exact delineation of river banks are critical, especially in the area of the Victory Gardens.	The bank and other resource areas were delineated and accepted by both the Boston and Brookline Conservation Commissions. The wetland delineation plans are contained in Appendix B.
I-5	...“Best Management Practices”... currently exist only on paper, and the minds of some, are not a reality. The only way that we can be sure that this will happen in the future is with EOEAs physical oversight	Proposed BMPs as well as other mitigation will become enforceable through permitting of this project and the agency review of the MEPA Annual Update that is required by the Secretary of Environmental Affairs.
I-6	The root system of many of the mature trees extend under the path system and all efforts should be made to safeguard these.	Sections 6 and 7 contain descriptions of impacts and protection for vegetation.
I-7	The phragmites act as a habitat for birds, ducks and other small animals and also as both a visual and sound buffer. I am not convinced that appropriate studies of the phragmites have been conducted as to their use of habitat	A Wildlife Habitat Evaluation and Vegetation Assessment of the Muddy River is contained In Appendix D.
LETTER J – CHARLES RIVER WATERSHED ASSOCIATION		

EMERALD NECKLACE ENVIRONMENTAL IMPROVEMENTS MASTER PLAN AND PHASE I MUDDY RIVER FLOOD
CONTROL, WATER QUALITY, HABITAT ENHANCEMENT, AND HISTORIC REHABILITATION
DRAFT ENVIRONMENTAL IMPACT REPORT

J-1	In addition to considering anadromous fish runs in the dredging schedule, project proponents should consider peak recreational periods as well.	The dredging will proceed through the blue back herring run. A construction period water quality monitoring program will be implemented in order to minimize the impacts to water quality from the construction (see Section 7). The staging areas have been designed to minimize the impacts to recreational and pedestrian uses (see Sections 5, 6, and 7 for information on staging area design, impacts, and mitigation.
J-2	Silt curtains should be employed in series to provide redundant systems to protect downstream turbidity levels.	Suspended solids in the return water will be reduced to permitted levels before discharge. Silt curtains will also be deployed around the work areas. The details of a Dredged Materials Management Plan and a Stormwater/Dewatering Pollution Prevention Plan are contained in Section 7.
J-3	Appropriate technology should be put in place at the outlet to the Charles to minimize sediment loads and associated pollutant loads due to agitation of the contaminated sediments and associated pollutant release.	Mitigation of sediment resuspension is discussed in Section 7.
J-4	The proponents should describe when and under what conditions the silt curtain effectiveness may be reduced. The proponents should consider suspending or curtailing dredging and other instream activities during these periods.	As stated in Sections 5, 6 and 7, the Contractor will be required to suspend dredging and other in-water construction during storms, and to remove equipment from the water, if necessary.
J-5	In addition to extending the channel bottom, the curtains must also extend to both left and right channel banks. This should be clearly stated in future project documents.	The deployment of silt curtains will have to be conducted in an appropriate manner. In many locations, it may be more effective to isolate the dredging area through the deployment of silt curtains parallel to the flow line, not perpendicular or bank to bank thereby blocking water flow.
J-6	We urge the proponents to identify other potential staging areas ... for discussion with the CAC. We oppose conducting any work not directly related to flood control and mitigation of dredging impacts downstream of the	Screening of staging areas for work is discussed in Section 2. Construction staging is discussed in Section 5 and generally recommends correcting flood conditions from downstream to upstream so as not to increase flooding by constructing upstream relief first.

	former Sears parking lot before upstream flooding has been addressed.	
J-7	The sizes and proposed locations of all settling basins should be thoroughly documented in the EIR.	This comment seems to address settling basins for sediment dewatering. The proposed project does not include settling basins for sediment dewatering and uses mechanical dewatering. Sediment dredging methodology is discussed in Section 2.
J-8	...the proponents should include the expected timeline for these basins to be online, as well as their removal--or modification if they are to be left in place. How long are odors to be released from the basins? How often will lime slurries be applied, and how effective are they at controlling odors?	See J-7.
J-9	The proponents have not described the fate of the settling basin liquids. How and where will they be disposed? Any discharge back to the Muddy River should be closely monitored and regulated. Alternatively, sewer system discharge should be considered.	See J-7. Return water from dewatering via belt filter presses will be settled before discharge to the Muddy River.
J-10	The EIR should propose in-stream performance standards for adsorbed as well as dissolved contaminants. Environmental monitoring is important to assessing impacts of the project, and reporting excursions to authorities is described in the ENF. In addition, an environmental response plan should detail reporting thresholds and at what thresholds will activities cease.	Discharge standards during construction are proposed in Section 6 and will be further discussed with the DEP for mitigation during the permitting process. These will be set during the permitting process and included in project specifications for enforcement during construction.
J-11	We recommend elutriate analyses to determine the impact of sediment agitation on in-stream water quality. Contaminated sediments will likely release contaminants to the water column.	Elutriate analysis on the most hazardous components is discussed in Appendix F.
J-12	... we recommend that the proponent develop a response	See the response to Comment J-10, above.

EMERALD NECKLACE ENVIRONMENTAL IMPROVEMENTS MASTER PLAN AND PHASE I MUDDY RIVER FLOOD
CONTROL, WATER QUALITY, HABITAT ENHANCEMENT, AND HISTORIC REHABILITATION
DRAFT ENVIRONMENTAL IMPACT REPORT

	plan describing what levels of instream contaminant concentrations would result in curtailing or modifying dredging activities.	
J-13	The proponent should be able to predict the depression in dissolved oxygen due to sediment resuspension using empirical methods as well. That sediment resuspension “may result in fish loss” ... is too vague a statement, and should be clarified.	In-stream suspended solids concentrations will be developed during the permitting process. In Section 6, a TSS concentration of 50 mg/l and a maximum daily limit of 100 mg/l in the return water is proposed.
J-14	The proponents should consider biomonitoring during dredging to assess instream impacts on sensitive species.	The comment is noted.
J-15	Where the proponents have a choice of dredging methods, we urge them to choose the most environmentally protective.	Dredging methodology is discussed in Section 2.
J-16	If track-mounted excavators are used, will they require water level drawdown? Will the excavators be working from within the waterway, or will they operate from the banks? If they operate from the banks, what bank damage can be expected, and what measures will be taken to minimize impacts on banks?	Water will not be drawn down using hydraulic dredging. Removal of <i>Phragmites</i> will be using mechanical excavator from barges in the Back Bay Fens and from the shore in The Riverway.
J-17	Will any of the dredging activities create stepped banks? If so, the steps should be smoothed to provide sufficient habitat for the flora and fauna. Stepped banks pose obstacles for some types of wildlife.	Banks will be regraded to historic shapes where disturbed which include a shelf for wetlands planting.
J-18	The proponents should describe plantings and maintenance plans for the restored wetlands. Control of invasive and exotic plants must be addressed.	Management and maintenance are discussed in Section 8.0.
J-19	The long-term plan must place more emphasis on the use of upstream controls. Given the expense of the project, as well as the environmental impact, the life of this project should	BMPs are discussed in Sections 5, 7, and 8.

	be extended as much as possible. Stormwater management plans for Boston, Brookline and Newton should be documented in the EIR.	
J-20	Demonstration [that] upstream control BMPs should be implemented as part of the overall project, in addition to controls proposed by Boston, Brookline and Newton.	See J-19.
J-21	We strongly support over-dredging near significant inlets to the system, as this will further extend project life and focus deposition into these zones.	These sedimentation basins are proposed as BMPs and discussed in Section 5.
J-22	Maintenance plans and responsibility for maintenance should be described in the EIR. Inlet controls... are not as effective as upstream controls, and should not be considered a replacement for them.	See Sections 5.0 and 8.0.
LETTER K- CITY OF BOSTON ENVIRONMENT DEPARTMENT		
K-1	This department would resist the use of Clemente Field for staging as it is a frequently used recreational area for such activities as baseball, softball and jogging. The Fenway and adjacent neighborhoods contain no similar areas for such recreation. We ask that the proponents make every effort to find an alternative location.	Clemente Field is not included as a proposed staging area.
K-2	Due to the unique characteristics of each of the water bodies identified in Phase 1 work, the Boston Conservation Commission (BCC) prefers to permit separately the work for each area. BCC staff is ... open to discussing alternative permitting arrangements that meet the needs of the BCC and proponents. We recommend that BCC staff be contacted as soon as possible to discuss this issue.	Permitting has been discussed with the Pre-application Review Committee, of which the Boston Conservation Commission is a part. The Charlesgate work will be permitted first. The balance of the project will be permitted as a whole, second. It is entirely possible for the Order of Conditions to contain Special Conditions for each individual water body.
K-3	Staff of the Environment Department and the BCC are concerned that revegetation will not begin until Phase II of	The re-vegetation of the bank and disturbed areas will be conducted in Phase I. The Preliminary Landscape Design plans are contained in

EMERALD NECKLACE ENVIRONMENTAL IMPROVEMENTS MASTER PLAN AND PHASE I MUDDY RIVER FLOOD
CONTROL, WATER QUALITY, HABITAT ENHANCEMENT, AND HISTORIC REHABILITATION
DRAFT ENVIRONMENTAL IMPACT REPORT

	the Master Plan, years 5 and 10. Such a gap may allow for the regrowth of invasive, opportunistic vegetation and for erosion on the riverbanks. We ask that the proponents evaluate ways to make this activity a greater project priority.	Appendix I.
K-4	The ENF does not specifically mention restoration and improvement of existing walkways in Emerald Necklace areas... We ask that this issue be discussed in the Draft Environmental Impact Report...	The Preliminary Landscape Design plans in Appendix I show the walkways that are to be repaired/replaced.
K-5	A number of large scale development projects have been proposed for the Fenway and Longwood Medical Areas and it is likely that there will be additional development proposed. Some construction projects will overlap with the extended timeframe for implementation of the Master Plan. For example, Emmanuel College... has proposed an extensive building program that will begin in the year 2000 and continue to 2010. The proponents should ensure that they are a part of construction coordination in the area.	Coordination on these matters are on-going and any potential construction conflicts will be identified and resolved. There will be close coordination with the City of Boston and the Town of Brookline to identify active and planned projects to monitor schedules to address potential problems and/or conflicts. This will involve ongoing communication and outreach with the proponents for these other projects.
K-6	We ask that the construction elements of the guidelines be implemented for this project.	The elements of the construction mitigation are contained in Section 7.
K-7	Please note that parking is at a premium in many areas identified in Phase 1 work, particularly the Riverway and the Back Bay Fens. It is important that the proponents address that such strategies as subsidized MBTA passes, secured on-site storage for workers' tools and remote parking with shuttles for construction workers. The enclosed guidelines contain additional specific suggestions for minimizing construction worker use of single occupant vehicles (SOVs).	Mitigation for the project will include restricting contractor access from existing public parking.
K-8	The ENF does not adequately address the historic	Sections 4 and 6 describe the historical significance and criteria and

	significance of the landscape itself, which is a local Landmark in Boston and Brookline and is listed in the National register of Historic Places and the State Register of Historic Places. It would be helpful for the historic/archaeological section of the D[E]IR to summarize construction and permanent impacts on a historic-designed landscape.	standards for historic properties and the construction and impacts on the landscape.
K-9	This section should also address minimization and mitigation of construction impacts from the operations associated with dredging, whether there will be any permanent changes to shoreline and land formations, and if/how removal of vegetation and new plantings will restore the original design intent.	A dredging methodology was selected to minimize impacts and mitigation measures are discussed in Section 7. Where shorelines are disturbed they will be restored to historic shape and location. Wetland and riparian planting as discussed in Sections 5 and 6 will be used to stabilize and restore disturbed banks.
K-10	Page 6 notes federal, state and local preservation reviews and approvals. These agencies should be included in the more detailed description of all environmental permits...within the <i>Emerald necklace Master Plan</i>	See Section 9 for a list of permits and reviews.
K-11	Due to archaeological, historic resource and wetlands elements of the project, we ask that the CAC include designees from both the BLC and BCC.	CAC members are designated by the Secretary of Environmental Affairs.
LETTER L- EDWARD B. CUTLER		
L-1	One aspect I think you must address... is the impact this end-to-end dredging will have on benthic invertebrates in the Muddy River.	The impacts to the benthic community are discussed in Section 6. It is acknowledged that there will be an impact to the benthic community and the carp and suckers which feed in it. However, these fish species also cause damage to water quality. There would be a beneficial change from a fish community which is totally dependent on the pollution tolerant benthos, to fish which utilize plankton as a food source.

EMERALD NECKLACE ENVIRONMENTAL IMPROVEMENTS MASTER PLAN AND PHASE I MUDDY RIVER FLOOD
CONTROL, WATER QUALITY, HABITAT ENHANCEMENT, AND HISTORIC REHABILITATION
DRAFT ENVIRONMENTAL IMPACT REPORT

LETTER M – REPRESENTATIVE PAUL C.DEMAKIS		
M-1	To avoid a repeat of catastrophic flooding that has occurred in homes and businesses in Brookline and the Fenway and in the MBTA’s Kenmore Station, priority should be given to flood control projects.	Construction staging of flood control elements is discussed in Section 5.
M-2	[Flood control prioritization of projects] should include, in the following order[:] removal of the constrictions at the railroad bridge between Ipswich Street and the Massachusetts Turnpike; daylighting of the river from above the former Sears parking lot to Fens Pond; daylighting of the river from Fens Pond to Higginson Circle; and installation of a larger culvert at Storrow Drive, where the Muddy River enters the Charles.	These flood control elements are discussed in Section 5. Increasing culvert size at the Charles River is not required to provide capacity for stormwater.
M-3	The dewatering facilities and staging areas should be relocated to an area away from where the river is to be daylighted so as not to delay the daylighting.	Staging areas are discussed in Section 2 and construction phasing in Section 5. Downstream dredging needs to occur before daylighting to provide sufficient downstream capacity.
M-4	After the flood control projects are completed, selective dredging should be commenced to improve the hydraulic flow of the river and remove contaminated sediment.	Dredging downstream of Sears Parking lot is part of the flood control project as discussed in Sections 2 and 5.
M-5	Dredging and widening of the river should be avoided in areas where there could be substantial risk to wildlife habitat, including the Victory gardens in the Fenway.	Dredging will not widen the river past the historic shoreline. <i>Phragmites</i> removal will widen channel area. All disturbed areas will be replanted with species providing an improved diverse wildlife habitat. See Sections 5 and 6.
M-6	Landscaping that is unaffected by the flood control and water projects can proceed without delay. The remainder of the landscaping should wait until after these projects are completed.	No landscaping is contemplated under this Phase 1 project that is not associated with rehabilitating disturbed areas from construction of flood control or habitat improvement through invasive removal.
M-7	The potential impacts of phragmites removal on wildlife habitat should be analyzed fully in the Master Plan EIR.	The benefits of removing <i>Phragmites</i> and replacing them with more diverse vegetation are discussed in Appendix D. The function and

	Phragmites removal should be limited to what is needed to achieve flood control and improved water quality.	value of replacement over current <i>Phragmites</i> is discussed in Section 6.
M-8	To the extent that phragmites is removed, they should be replaced by other plantings which preserve the sightlines and noise buffer now provided by the phragmites.	See the Preliminary Landscape Design plans in Appendix I and Section 6.
LETTER N – DEPARTMENT OF ENVIRONMENTAL PROTECTION		
N-1	Although not identified in the ENF, the Riverfront Area, as regulated under 310 CMR 10.58, should be included as an existing resource area and assessed relative to impacts from the project.	The riverfront area was identified in the wetland delineation plans (Appendix B) and is included in Section 6. The introduction of diverse wetland shoreline and upland plants along the banks will enhance the riverfront area.
N-2	A definitive delineation of wetland resource impacts, including topographical/bathymetric surveys should be undertaken to quantify the areal and linear extent of existing resources and proposed project impacts to these wetland resources should be prepared as a submittal or review document leading up to the EIR.	These are delineated in the wetland plans in Appendix B and are also described in Sections 4 and 6.
N-3	Given the initial scope of proposed impacts from the project, the project is also likely to trigger the requirements for a Wildlife Habitat Assessment...which therefore should be included in the EIR.	See Appendix D for the Wildlife Habitat Evaluation and Vegetation Assessment.
N-4	In order to determine if an adverse impact will occur to rare species habitat, the applicant must consult with the Natural Heritage and Endangered Species Program. The EIR should include this determination.	Consultation took place with the Natural Heritage Program and a no adverse impact program for the three spine stickleback was developed and is contained in Section 7. Correspondence on this matter is contained in Appendix K.
N-5	In sum, a variance may not be required if the project is determined to have no adverse impact on rare species habitat and the project impacts can be limited to those necessary for enhancing the natural capacity of the system to [improve flood control and for prevention of pollution (i.e. water	A habitat enhancement plan for the stickleback was developed and is in Section 7. See Appendix K for correspondence relating to no impact to the grebe and the three spine stickleback.

EMERALD NECKLACE ENVIRONMENTAL IMPROVEMENTS MASTER PLAN AND PHASE I MUDDY RIVER FLOOD
CONTROL, WATER QUALITY, HABITAT ENHANCEMENT, AND HISTORIC REHABILITATION
DRAFT ENVIRONMENTAL IMPACT REPORT

	quality enhancements). }	
N-6	In order to receive a variance the applicant is required to show that there is an overriding public interest in the project, that no other reasonable alternative exists and that mitigation efforts will be undertaken to minimize the project impacts. In addition, as part of the variance request, the applicant is required to identify those performance standards for each resource area of the wetland regulations for which a variance is sought.	Because there is no impact to rare, endangered or threatened species and that the habitat will be enhanced as the result of the project, there is no need for a variance. The project will be permitted as a Limited Project.
N-7	In the EIR, as part of the variance request the applicant must document the overriding community, regional, state, or national public interest of the project.	See the response to comment N-6, above.
N-8	The EIR should identify the specific public interest that is being served by the project and why that interest represents an overriding public interest comparable to the interests established in previous variance decisions.	See the response to comment N-6, above.
N-9	...the EIR should include a full discussion of the historic flooding that has occurred along the Muddy River. Documentation of past flooding problems should include information regarding past flood events, flood frequency, flood damages (i.e. personal and property damages.	Flood elevations are discussed in Appendix E.
N-10	In addition to documenting the public interest in the project, the EIR should quantify the extent of the flooding problem. Identify watershed flood storage deficits (on a subwatershed level), and identify the storm event frequency for which the project s designed.	Flood storage is discussed in Section 2. The storm design event is described in Appendix E.
N-11	The overriding public interest should also be documented with correspondence from relevant public officials and agencies which support the purpose of the project. A clear	See the response to comment N-6, above.

	description of the project purpose will serve to refine... the scope of alternatives.	
N-12	The EIR should include a discussion of all the reasonable alternatives which have been considered for the present project in order to avoid wetland impacts.	Alternatives are discussed in Section 2.
N-13	For those alternatives which do not meet WPA performance standards, a description should be provided in the EIR of the wetland impacts of each alternative.	The relation to WPA performance standards and other regulatory criteria are discussed in Section 9.
N-14	For those alternatives which meet the WPA performance standards, an explanation should be provided as to why those alternatives are not reasonable for accomplishing the project purpose.	See N-13, above.
N-15	The preferred alternative should represent the most reasonable alternative and which results in the least wetland and overall environmental impacts.	Alternatives are discussed in Section 2. The proposed alternative will provide the greatest environmental benefit to the WPA performance standards while also meeting the project's objectives of providing flood control, improving water quality, enhancing aquatic and riparian habitat, restoration of historic landscape, and implementing Best Management Practices.
N-16	The scope of alternatives should include an analysis of "off-site" alternatives which may serve to achieve the project purpose or which will help minimize environmental impacts to the river corridor.	An "off-site" alternative for storage was studied and was not found to be feasible.
N-17	...the EIR should include an assessment of reasonable alternatives available for flood control.	See Section 2.
N-18	[Flood control alternatives] should include the use of stormwater control BMPs to buffer peak stormwater flow on the main stem, as well as the tributaries of the Muddy River. Another alternative which should be considered and discussed ... involves improving the hydraulic gradient	See Section 2.

EMERALD NECKLACE ENVIRONMENTAL IMPROVEMENTS MASTER PLAN AND PHASE I MUDDY RIVER FLOOD CONTROL, WATER QUALITY, HABITAT ENHANCEMENT, AND HISTORIC REHABILITATION
DRAFT ENVIRONMENTAL IMPACT REPORT

	between the Muddy River and the Charles River.	
N-19	The EIR should include and assessment of the low hydraulic gradient which exists along the Muddy River, through the Back Bay Fens, to the Charles River.	Hydraulic gradient is discussed in Appendix E and Sections 4 and 6.
N-20	Because the Charles River elevation is controlled by operations of the Charles River Dam, the EIR should include a discussion of the feasibility (i.e. potential benefits and detriments) of modifying Charles River elevation during storm events to increase drainage discharge rates through the Muddy River.	A sensitivity analysis of changing discharge conditions at the Charles River Dam was evaluated and is discussed in Appendix E.
N-21	The EIR should a complete and detailed discussion of the ACOE study findings and proposed options. These dredging alternatives should be considered in light of which alternative will result in fewest environmental impacts <u>while achieving the aforementioned (and quantified) objective of the project.</u>	The process of selecting the proposed alternatives included an assessment of the degree to which the alternatives provide the most environmental benefit, in addition to flood control (see Section 6 - Environmental Impacts). In the final assessment (see Section 9 - Regulatory Compliance, it was determined that dredging of a flood channel plus the removal of the <i>Phragmites</i> and combined with planting of wetland, shoreline and upland vegetation would result in the greatest environmental benefit.
N-22	The wetland resource impacts of each dredge alternative should be documented in the EIR. If certain dredge alternatives are found to comply with the wetland regulations, but were not selected as the preferred alternative, the EIR should describe why the alternative is not feasible for achieving the project objective. This is particularly important in that the October 1998 <u>Proposed Phase I Flow Improvements in the Muddy River</u> prepared by [CDM] for EOEa appears to indicate that the historic flooding problems can be addressed with far less dredging (17,000 cy versus 172,000 cy indicated in the ENF.)	The impacts to the existing resource areas from partial dredge versus full dredge alternatives are assessed in Section 2 - Project Alternatives. Each of the alternatives were compared against the project objectives in order to select one or a combination of alternatives that best accomplished the objectives. In Section 9 - Regulatory Compliance, the selected alternatives were then individually and in combination compared against the project objectives and regulatory interests and standards. Further hydraulic analysis that was also conducted and is reported in Sections 4 – Existing Conditions and Section 6 - Environmental Impacts. These analyses indicated that it was necessary to dredge the Charlesgate Area, the Back Bay Fens, and The Riverway

		and to increase the size of the culverts in order to accomplish the flood control objective.
N-23	The EIR should provide a full description of the mitigation measures which are proposed for this project. The discussion of mitigation measures should detail the extent of wetland resource impacts, the functions associated with those resources, and the mitigation measures which will minimize resource impacts and/or restore resource functions.	Section 6 - Environmental Impact and Section 7 - Environmental Mitigation contains an assessment of the effectiveness of the proposed mitigation measures. Section 9 - Regulatory Compliance contains an analysis of the benefits/negative impacts of the proposed alternatives versus the project objectives and various regulatory interests/standards.
N-24	In discussing replication of resource areas, the applicant should document how the replication effort will comply with the detailed discussions as to the location, size, and methodology to be used in replicating resource areas as part of the mitigation plan.	Sections 4 - Existing Environment, and 6 Environmental impacts, contain an analysis of the existing ecological functions and values that would be derived from each alternative. Section 9 - Regulatory Compliance contains an analysis of the benefits/negative impacts of the proposed alternatives versus the project objectives and various regulatory interests/standards.
N-25	Depending on the final assessment of wetland impacts, the EIR should describe how and where the altered wetland resources and the associated functions will be replaces and/or restored.	See the response to comment N-24, above.
N-26	...mitigation... includes a phased approach of dredging, use of silt curtains and booms, and monitoring of the operation. As part of the EIR, these mitigation efforts should be more fully developed and include a discussion on maintenance of the erosion control systems and contingencies for significant storm events during the construction period.	Section 7 - Environmental Mitigation contains a presentation of each the proposed mitigation measures. These include, but are not limited to hay bales, silt curtain, silt and oil booms, detention tanks, wheel washes, street sweeping, etc.
N-27	The EIR should include a description and design for the construction and dewatering areas in order to allow for a more detailed assessment of how this area may be impacted by the project. In addition, the EIR should identify and	Staging sites and screening of alternatives are discussed in Section 2.

EMERALD NECKLACE ENVIRONMENTAL IMPROVEMENTS MASTER PLAN AND PHASE I MUDDY RIVER FLOOD CONTROL, WATER QUALITY, HABITAT ENHANCEMENT, AND HISTORIC REHABILITATION
DRAFT ENVIRONMENTAL IMPACT REPORT

	discuss alternative staging and dewatering locations for the project area. A discussion of backup alternatives to the Sears lot may prove useful....	
N-28	If phragmite removal is to remain a realistic goal, the Department recommends that the proponent examine the various phragmite stands and consider the likelihood of success in each area based on surrounding habitat, vegetation and hydrology and the costs of removal, replanting and on-going maintenance.	The cost for management and maintenance of the future parkland is contained in Section 5.
N-29	The EIR must contain a detailed discussion that 1) identifies the areas for phragmite removal and replacement; 2) [identifies] the criteria used to choose the areas; 3)[includes] a description of how the work will be undertaken each area; 4)[describes] the species to be planted in each area; 5) [describes] the on-going monitoring and maintenance, including replanting, that will be undertaken; and 6) [identifies] the party, or parties, that will be responsible for carrying out all phases of the work.	See Sections 5, 6, 7, and 8 for information relating to the proposed design, environmental impact, environmental mitigation, and management and maintenance, respectively.
N-30	All work in wetland resource areas, ... would need to be overseen by a wetlands professional with experience in restoration of wetlands and riparian areas.	A wetland scientist is part of the design team and will also be part of the construction management team.
N-31	Proposed alteration to Bank should be described in detail in terms of each proposed ??? the related project goals. It is not clear to DEP why alterations to the Banks of the [are] required in order to meet the goals of the project.	The bank will be disturbed in the course of removing the <i>Phragmites</i> root mat as well as other invasive plants. Disturbance of the eroded banks is also necessary in some locations to stabilize the bank. Bank disturbance is necessary to implement some elements of the project and to meet the project objectives of water quality improvement (through bank stabilization), to enhance aquatic and riparian habitat, to restore historic landscaping (the historic bank behind the Victory Gardens), and to implement BMPs.

N-32	The EIR should distinguish between the types of impacts within each wetland resource area.	See Section 6.
N-33	Based on observations made during an inspection of the River in the spring of 1999 and on a review of the above-referenced CDM report....it is the Department's opinion that the magnitude of dredging currently proposed is excessive and will be difficult to justify.	Dredging downstream of the former Sears parking lot is required to pass the design storm. In addition, removal of all <i>Phragmites</i> upstream in The Riverway is also required to pass the design storm. Because water flow velocity will be increased after dredging (see Section 6) it is also necessary to remove the sediment from The Riverway to prevent it from washing into already dredged flood channel areas of the back Bay Fens. Further dredging for removal of the <i>Phragmites</i> and its root mat is necessary to provide for the enhancement of the aquatic and riparian habitat through the introduction of a diversity of wetland, shoreline, and upland plants that do not presently exist.
N-34	Each of the main project goals should be clearly defined so that activities and impacts related to each one may be described and understood.	The project objectives are described in Section 1.
N-35	Due to the multi-purpose nature of this project the proponent must specify exactly what purpose is driving each proposed activity. Project goals should be prioritized when a particular activity has multiple purposes.	The project objectives are described in Section 1. The objectives cannot necessarily be prioritized because they are inter-related and are inter-dependent.
N-36	We are concerned about the statement that "overdredging" will be performed in some areas. The specific purpose of this is unclear and should be clarified.	In-channel sedimentation basins will be dredged in order to provide for the localized settling of solids, to prevent their downstream migration, and to facilitate their future removal.
N-37	Use of silt curtains with windows was mentioned as a way of controlling turbidity from the dredging operation..... In the Muddy River, the use of windows would be counter-productive because the water is shallow and turbidity will be distributed throughout the water column.	Silt curtains are part of the overall construction mitigation program that is described in Section 7.
N-38	The proponent will need to assess whether pre-dredging "debris removal" will be necessary to allow for certain types	Hydraulic dredging may not remove certain debris and barge mounted backhoe will be used where necessary to remove "debris".

**EMERALD NECKLACE ENVIRONMENTAL IMPROVEMENTS MASTER PLAN AND PHASE I MUDDY RIVER FLOOD
CONTROL, WATER QUALITY, HABITAT ENHANCEMENT, AND HISTORIC REHABILITATION
DRAFT ENVIRONMENTAL IMPACT REPORT**

PAGE 42 OF 56

	of dredging operations to be performed. This is particularly important when the “environmental bucket” is proposed.	
N-39	...the management of the 172,000 plus (potentially up to 260,000) cubic yards of sediment discussed in the report will be a critical aspect of the project and will need to be fully and carefully addressed in the EIR.	Management of dredged sediments is discussed in Appendix F and Sections 2, 5, 6, and 7.
N-40	The proponent will need to fully characterize and classify the sediment in order to identify allowable/feasible disposal options.	See Appendix F.
N-41	...there may be specific areas of the river where sediment will require pre-treatment and/or disposal at facilities which are specifically designed to manage particular types and/or concentrations of contaminated soil/sediment(e.g. TCLP-Lead or TSCA PCB materials).	Treatment of TCLP lead sediments is discussed in Sections 2 and 5.
N-42	Since these specialized facilities will have significantly higher costs than a conventional lined landfill, it will be important to attempt to find out and segregate the more problematic sediment and manage them separately. This situation should be addressed further in the EIR.	Sediment segregation and disposal is included in Section 5 and Appendix F.
N-43	If the final proposal includes the removal of sediment from any of the culverts, [exceedances of TCLP-Lead hazardous waste and Reactive Cyanide criteria] will need to be considered in the specific dredging, stockpiling, sampling and disposal procedures.	Culvert sediments are not significantly different than stream sediments and testing has been included for disposal.
N-44	At this point DEP is assuming that all sediment could be Sulfide Reactive and will require compliance with DEP's 1997 Interim Management Procedures for <u>Upland Reuse/Disposal of Contaminated Sediments</u> .	Only 15 percent of sediment samples exceeded reactive sulfide limits. Reactive sulfide sediments are assumed to be disposed out of state.
N-45	The above actions could result in up to 3 or 4 different	Sediment quality is addressed in Appendix F and segregation for

	categories of sediment which would require separate handling and management, a situation which could significantly complicate the siting and unloading, dewatering, treatment and temporary stockpiling activities. [...]obtaining an area(s) in close proximity to the dredging zones that would be able to support such project needs will be difficult and the proponent should prioritize this activity. [...] these issues will need to be discussed and evaluated in the EIR.	processing is discussed in Sections 2 and 5.
N-46	ENF assumes sediments will go to a DEP- approved Lined Landfill... This may or may not be possible in that there are currently very few in-state landfills that are either approved to receive this type of material or would be interested in accepting it. DEP strongly recommends that the proponent contact lined landfills located in other nearby states to discuss potential sediment disposal. The EIR must address this issues.	Disposal costs assume disposal is based on quality of sediments and is discussed in Sections 2 and 5.
N-47	...it is unclear the effect of lime addition on Reactive Cyanide sediments and this will need to be researched by the proponent. The listing of analytical requirements in the ENF will need to be expanded to deal with Reactive Sulfides/Cyanides and PCBs.	Sediment analysis includes reactive cyanide and there were no exceedences. Some sediments exceed PCB limit of 2 mg/kg and will be disposed in out of state landfill.
N-48	If any of the sediment ends up with a Characteristic Hazardous Waste Exceedance and the proponent proposes to treat the material at the site of generation to "remove the hazardous characteristic" ... the treated materials must also meet the new Phase IV Land Disposal Restrictions (LDRs) which, depending on the "other contaminants" in the sediments to be treated, might require a second round of	This is true and disposal costs have been estimated to reflect this cost of disposal.

EMERALD NECKLACE ENVIRONMENTAL IMPROVEMENTS MASTER PLAN AND PHASE I MUDDY RIVER FLOOD
CONTROL, WATER QUALITY, HABITAT ENHANCEMENT, AND HISTORIC REHABILITATION
DRAFT ENVIRONMENTAL IMPACT REPORT

	treatment at an off-site facility such as a thermal processing facility.	
N-49	There is no discussion in the permits section regarding the need for a Special Waste Determination, which would be necessary to obtain DEP approval for in-state disposal of treated sediment.	It is not expected to obtain special waste determination.
N-50	Prior sampling has show[n] total PCBs in the 2.3 to 2.5 mg/kg range. These levels of PCBs could be a problem for landfill reuse and disposal, at least in-state. DEP currently uses 2 mg/kg as a general guide for REUSE and DEP can potentially allow higher concentrations for disposal, but historically most in-state landfills will not accept materials with greater concentrations of PCBs.	PCB concentrations range as high as 3-7 mg/kg although less than 10% of sediment exceeds 2.0 mg/kg. Anticipate disposing PCBs out of state.
N-51	TPH levels in all sampling programs are very high; in the 10,000 to 30,000 mg/kg range. (DEP lined landfill reuse criteria being 5,000 mg/kg).	VPH/EPH sampling has been used to determine true petroleum contamination. Only 4 samples exceed EPH limits.
N-52	The [ENF...] states that post-dredging (after lime addition) "supplemental confirmatory sampling" will be necessary to verify material are not exceeding a Hazardous Waste characteristic/ and or meeting disposal criteria. ... DEP will look to the proponent to define the scope and nature of this activity.	Anticipate taking post-treatment samples using one composite sample consisting of one sample from each roll-off box up to 100 cubic yards per composite sample.
N-53	It is unclear if, and when, the dredging of the Franklin Park Area would take place. It is discussed in the report but the 172,000 c.y. of sediment figure which is used throughout the ENF does not include the 90,000 c.y. from the Franklin Park Area. This needs to be clarified.	Franklin Park dredging will not be part of Phase 1 project.
N-54	The discussion.... Relative to "hazardous levels of lead" and disposal options is confusing and may not be accurate.	Anticipate dealing with hazardous levels of lead similar to the Central Artery/Tunnel Project.

	Discussion with DEP on this issue should take place.	
N-55	The Permit Section discusses the need for a NPDES Permit for the dredging backdrainage/dewatering. DEP attempts to approve this activity as an element of its 401 WQC... This should be discussed among EPA and DEP and the project proponent.	As the result of discussions with the DEP regarding the discharge of return water from the dredging, the need for an individual NPDES Permit has been eliminated. The discharge of return water will be included in the Water Quality Certification.
N-56	...the proponent should include a drainage and stormwater management plan to ensure that the benefits of the dredging project will not be diminished by existing or future pollution sources.	See Sections 5 and 8 for information pertaining to BMP implementation.
N-57	...the proponent has indicated that enhanced best management practices (BMPs) will be pursued and structural controls at key locations will be considered. DEP agrees that these actions will be critical in achieving and maintaining water quality improvements in the Muddy River Basin, and suggests that these activities be identified in a specific stormwater and drainage management plan conforming to the March 1997 DEP Stormwater Management Standards and Technical Guidance ...	See BMPs discussion in Section 5 and Monitoring and Maintenance Plan in Section 8.
N-58	...the Boston Parks and Recreation Department should work with the Boston Water and Sewer Commission, the Brookline DPW, the Newton DPW and the Metropolitan District Commission to review the existing pollution control and stormwater management practices and explore opportunities to work together to enhance BMP Programs in the Muddy River Basin.	Coordination is on-going between the Project Proponent and these agencies.
N-59	The Plan should evaluate the need for structural controls at the major drainage locations in the Muddy River Basin, including the Village Brook Drain, Tannery Brook Drain,	Same as N-57.

EMERALD NECKLACE ENVIRONMENTAL IMPROVEMENTS MASTER PLAN AND PHASE I MUDDY RIVER FLOOD CONTROL, WATER QUALITY, HABITAT ENHANCEMENT, AND HISTORIC REHABILITATION
DRAFT ENVIRONMENTAL IMPACT REPORT

	and the Longwood Drain.	
N-60	The Plan should identify the range of possible structural BMPs and should consider siting constraints, costs, and operations and maintenance requirements.	Same as N-57.
N-61	The Plan should identify and incorporate site controls to minimize pollution from site runoff.	Site controls are part of construction mitigation. See Sections 5, 6, and 7.
N-62	The Proponent should develop a plan for managing runoff from potential sources of pollution associated with vehicle/equipment access and maintenance areas....	Same as N-61.
N-63	The proponent should consider as part of the Plan detention basins which include a polymer feed system to enhance settling of fine silts and clays.... DEP will work with the proponent to develop strategies to manage on-site stormwater runoff.	Settling basins are part of dewatering discharge plan in Sections 2, 5, 6, and 7.
N-64	...runoff from areas of the site where lime addition is performed and treated sediment are stockpiled will likely require active pH control to reduce elevated pH from the lime.	Lime, if required will not be in stockpiles. PH control may be needed for dewatering discharge and will be included with the return water sedimentation basin.
N-65	Phasing of the project should be specifically addressed in the EIR Scope. Sequence of work activities within each phases should also be addressed.	Phasing is discussed in Section 5.
N-66	Typically, permitting under 404 and 401 requires a "single and complete" project-wide filing. This would require that all wetland impacts (state and federal) be identified and mitigated as part of a single application and permit. Therefore, wetland impacts from future phases of work (such as landscaping or historical renovations) must be considered in the applications for these permits, and therefore, addressed in initial phase of this project. DEP	The project has been discussed with the ACOE. Future impacts to wetland resources, if any, will be addressed in the MEPA Annual Update (see Sections 8 and 9).

	recommends that the proponent discuss this issue with ACOE staff.	
N-67	DEP also recommends that all items in Phases II and III should be reviewed and discussed, at least conceptually, relative to the benefits and/or need to incorporate particular aspects into Phase I.	See N-66.
N-68	DEP believes that the implementation of diesel emission controls for the on-site construction equipment for the Muddy River project, particularly equipment that will be operating on the dewatering and stockpiling area(s) but possibly also the dump trucks to be used to haul the sediments to and from these locations, can significantly mitigate localized adverse air quality impacts at nearby sensitive receptors and recommends that MEPA include in its EIR scope the requirement that such actions be assessed.	See Section 7.
LETTER O-MASSACHUSETTS DIVISION OF FISHERIES AND WILDLIFE		
O-1	We would recommend the major project emphasis be on source control of CSOs, sediment, sewerage, and oil and that the EIR quantify point and non-point inputs and explore various source control options in a cost benefits framework involving all feasible alternatives to bank to bank dredging.	Source control through structural and non-structural BMPs is discussed in Section 5. These are not being implemented instead of dredging since much of the dredging proposed is for flood control. Both strategies are needed to meet project objectives.
O-2	In addition to the alternatives mentioned in the ENF such as flow augmentation and/or dredging of flow restricted areas, the EIR should consider a mix of lower cost approaches as well as the use of alum to fix bottom nutrients and contaminants in no-dredged areas and the use of herbicides to control exotic plants.	Dredging is not the principal alternative to address water quality although required dredging will positively benefit water quality. Herbicides are a control element for invasives and are in the Management and Maintenance Plan in Section 8.
LETTER P – FEDERAL EMERGENCY MANAGEMENT AGENCY		
P-1	...until site specific details are developed, including staging	See Sections 2, 5, and others.

EMERALD NECKLACE ENVIRONMENTAL IMPROVEMENTS MASTER PLAN AND PHASE I MUDDY RIVER FLOOD
CONTROL, WATER QUALITY, HABITAT ENHANCEMENT, AND HISTORIC REHABILITATION
DRAFT ENVIRONMENTAL IMPACT REPORT

	areas and dredging methodology, it is difficult to accurately assess the environmental impact of the action.	
P-2	Our primary concern with the ENF is that the treatment of both dredge materials and the associated waters be adequately identified and evaluated in the EIR as substantial issues and appropriately addressed.	See Sections 2, 5, 6, and 7.
P-3	In addition, the discussion of historical and archaeological resources...while describing the goal of restoring many of the cultural and functional aspects of the Emerald necklace Park System, fails to discuss the potential for adverse affects [sic] to a listed Historic District.	See Sections 4, 5, 6 and 7.
LETTER Q – HISTORIC MASSACHUSETTS		
Q-1	The description and assessment of the Project’s other impacts on land and description and assessment of the Project’s impacts in historical and archaeological resources do not identify or protect historically significant areas, although delineation of significant vegetation is identified.	See Sections 4, 5, 6 and 7.
Q-2	Both the designed landscape features and certain vegetation have historic as well as environmental significance. These areas must be identified and protected in the dredging process.	The inventory and analysis plans identify heritage trees. Section 7 contains a discussion of impacts as well as protection.
Q-3	The description and assessment of proposed measures that would mitigate impacts on land does not adequately describe any measures that would mitigate impacts on the historic quality if the park, other than to note that “any BMP proposed in the Phase I EIR not be intrusive and blend with the historic and visual impacts of the park.	Sections 4, 5, 6, and 7 and the Preliminary Design Plans L-1 to L-50 in Appendix I contain measures for the restoration and rehabilitation of disturbed areas and mitigation of impacts.
Q-4	The description and assessment of proposed measures that would mitigate impacts on historic and archaeological	Sections 4, 5, 6, and 7 and the Preliminary Design Plans L-1 to L-50 in Appendix I contain measures for the restoration and rehabilitation of

	resources is not answered....	disturbed areas and mitigation of impacts.
Q-5	A plan to minimize the adverse impact of the work itself- the use of heavy equipment, the schedule and placement of work areas to protect historic plant materials, and the placement of laydown areas – on the nationally significant historic landscape must be developed and reviewed by the relevant agencies before the project can proceed.	Sections 4, 5, 6, and 7 and the Preliminary Design Plans L-1 to L-50 in Appendix I contain measures for the restoration and rehabilitation of disturbed areas and mitigation of impacts.
	LETTER R – PAULINE R. KATZ	
R-1	My major concern regards plans for continuous outreach to the population living along the Emerald Necklace that is not affiliated with advocacy groups or civic associations	This project has involved extensive public outreach. A summary of the outreach efforts, including meetings, site tours, and the like is provided in Section 3 and Appendix L.
	LETTER S- HARRIET F. KOCH	
S-1	I hope you will keep all of us interested citizens informed, by regular meetings open to the public and mailings as appropriate.	Same as R-1.
	LETTER T – MASCO	
T-1	Are there ways to buffer the pedestrian from the proposed construction?	Such measures are included in Section 7 – Environmental Mitigation.
T-2	Are there ways to mitigate the traffic congestion impacts?	The EIR documents traffic-related construction mitigation, including time restrictions and truck route designations.
T-3	Are there ways to mitigate the foul odors?	Contained mechanical dewatering will minimize odors. Additional controls such as covers over dewatering equipment and order foams will be used if needed.
T-4	How long will the dewatering process take?	Mechanical dewatering will be a real time method for preparing sediments for disposal rather than stockpiles. No material, other than stabilizing for lead treatment, will remain in stockpile and will generally be removed in trucks each day. See Sections 2, 5, 6, and 7.
T-5	Could foul odors, traffic disruptions and aesthetic concerns be reduced during peak travel times?	The EIR documents traffic-related construction mitigation, including time restrictions and truck route designations.

**EMERALD NECKLACE ENVIRONMENTAL IMPROVEMENTS MASTER PLAN AND PHASE I MUDDY RIVER FLOOD
CONTROL, WATER QUALITY, HABITAT ENHANCEMENT, AND HISTORIC REHABILITATION
DRAFT ENVIRONMENTAL IMPACT REPORT**

PAGE 50 OF 56

T-6	Are there ways to improve the area aesthetically, while this process is taking place?	Physical screening during construction is not part of the project plan. Re-vegetation will commence as soon as growing conditions allow after construction in any particular area has been completed. See the Preliminary Design Plans L-1 to L-50 in Appendix I.
T-7	Please add “removing and daylighting culverts” to the list of infrastructure improvements in the second paragraph on page three. The proposal is not only to replace culverts.	Daylighting of buried culverts has been added to the project.
T-8	Page 23, silt curtains. Please include some kind of time frame, so that the curtains and booms do not stay in the river indefinitely.	Silt curtains, booms, silt fencing, hay bays and pipelines will be removed as soon as possible after construction is completed in any particular location and they are no longer needed.
T-9	Page 25. Table 5 is unclear, and I could not find the reference in the text. Is this what was tested for, what was found, and/or what is proposed to be tested for?	Further information on testing and the quality of sediments is to be found in Appendix F – Sediment Characterization.
T-10	On the dredging certification application (page 2 of 5), it states that “it is recommended that the Muddy River system be dredged once every 10-20 years. It is expected that this dredging interval will change.” Will the dredging interval be more or less frequent? Why would the dredging interval change? Is it realistic to dredge more frequent than every 30 years?	BMPs will be instituted with a goal of increasing the dredge frequency to more than 50 years. See discussion in Section 5.
T-11	The banks are severely eroded in the Riverway portion of the Muddy River, with outfall pipes suspended out over the water, exposing six feet or more of conduit. Page 6-1 includes some funding for bank stabilization in this area, but is not mentioned as a recommended action on page 2-8, 2.3.5 Riverway. Please include remediation of this problem as a part of your bank stabilization project.	Banks will be restored and re-vegetated as shown in the Preliminary Landscape Design Plans in Appendix I – Preliminary Design Report.
LETTER U– MASSACHUSETTS HISTORICAL COMMISSION		
U-1	...MHC requested ... (1) an assessment of what effect the	See Appendix E – Flood Analysis and Section 6.

	proposed initial-phase dredging may have on upstream water levels, and if water levels are expected to decrease, an assessment of any potential effects on exposed river banks and nearby vegetation....	
U-2	[MHC requested] information on the age of the underwater stop log structure (Ipswich Street vicinity) which is proposed for removal....	This structure is believed to be remnants from construction of a modern downstream bridge, possibly the Massachusetts Turnpike. The weir impedes high water flows. It's removal will not change water levels.
LETTER V- MUDDY RIVER ACTION GROUP		
V-1	The dewatering facilities and staging areas can not be located where the river is to be daylighted, since this would force the daylighting to be the last project.	Staging areas are discussed in Section 2 and construction staging is discussed in Section 5.
V-2	After these projects, when the river is no longer constricted, we believe that dredging should commence to improve the hydraulic flow of the river and to remove contaminated sediment...	Dredging is an integral portion of flood control and if not undertaken downstream of daylighting and culvert replacement first, the downstream flood conditions could worsen. See construction staging in Section 5.
V-3	Unnecessarily disruptive dredging and watercourse widening in the Victory Garden area should be avoided.	Dredging in the Victory Garden area would be to the historic shoreline as discussed in Sections 5 and 6.
V-4	Landscape work that is clearly unaffected by flood mitigation and water quality work should be undertaken in a timely manner.	The proposed re-vegetation is shown on the Preliminary Landscape design Plans L1 through L50 in Appendix I – Preliminary Design Report.
LETTER W – NATURAL HERITAGE AND ENDANGERED SPECIES PROGRAM		
W-1	Two rare species, the ‘threatened’ Threespine Stickleback and the ‘endangered’ Pied-billed Grebe occur in the area of Olmsted Park.	Appendix D – Wildlife Habitat Evaluation and Vegetation Assessment and Section 4 contain an identification of the locations where the three spine stickleback is located. Section 7 contains a mitigation and habitat enhancement plan that was reviewed with the NHESP.
W-2	NHESP has no record of the Spotted Turtle occurring in this area as stated in the ENF.	Comment noted.
W-3	NHESP will need to review plans for dredging and restoring this area to ensure that these species are not harmed.	A representative of the NHESP was present at a field trip to the habitat of the three spine stickleback and grebe and has participated in

EMERALD NECKLACE ENVIRONMENTAL IMPROVEMENTS MASTER PLAN AND PHASE I MUDDY RIVER FLOOD
CONTROL, WATER QUALITY, HABITAT ENHANCEMENT, AND HISTORIC REHABILITATION
DRAFT ENVIRONMENTAL IMPACT REPORT

		discussions and correspondence regarding these species. See Section 7 and Appendix K.
	LETTER X – BERNARD J. RANSIL	
X-1	One would hope that, if the Emerald Necklace is to be restored, its restoration would follow Olmstead’s [sic] original plans as closely as possible rather than permit some eager but inexperienced amateurs to “do their thing”	Registered and Certified Landscape Architects and Wetlands Specialists have participated in the project design. Sections 4, 5, 6, and 7 contain the results of these efforts.
	LETTER Y- RESTORE OLMSTED’S WATERWAY	
Y-1	Analysis of USGS sediment report. Where are these heavy metals etc. coming from? Why is the Emmanuel Drain the worst?	Sediment quality and probable sources are discussed in Appendix F.
Y-2	Why does the siphon at Longwood under the River periodically blow its caps and spread medical waste into the river[?]	This is connected to the capacity of sanitary sewers and should be addressed with the BWSC. This is a sewer separation issue.
Y-3	Why [are] Franklin Park and Arnold Arboretum... included in the Muddy River plans?	Franklin Park and the Arnold Arboretum are not part of the Phase I Project. Should they be included in future work, the proposed work will be identified in the MEPA Annual Update.
Y-4	The Muddy River plan must concentrate on its most seriously polluted areas and that is not Sargent’s Pond, Franklin Park, or Jamaica Pond.	None of these water bodies are part of the Phase I Muddy River Project.
Y-5	You are wasting your time and public money not addressing these sewer problems [e.g., CSOs at Tannery Brook, Kent Square]	Sewer separation is a continuing element of BMPs discussed in Section 5.
Y-6	I think the proposed plan should be carefully studied by a group of highly qualified engineers, totally objective.	The proposed plans have been reviewed and commented upon by engineers from the Management Consultant’s office.
	LETTER Z – RIVERWAY SQUARE CONDOMINIUM TRUST	
		No response required.
	LETTER AA – RIVERWAYS PROGRAMS	
AA-1	The dredging plan should undertake full MEPA review	The project is undergoing a full MEPA review.

	including the preparation of an EIR which examines the environmental impacts of the Phase 1 projects, reviews Phase 1 in relations to the entire three phase project, thoroughly investigates the alternatives possible, and considers the cost effectiveness of this tax payer funded initiative.	
AA-2	Addressing the root causes of the problems in the Muddy River watershed should be the first phase of this project.	The Project Objectives and Alternatives are discussed in Sections 1 and 2.
AA-3	What will be the flood level reductions for various statistical storms and storm intensities such as the 2,5, 10, 50, and 100 year storms, and thee 10 year 24 hour storm?	These elevations are provided in US Army Corps of Engineers Report.
AA-4	Will the decrease in flooding impacts be small and potentially infinitesimal for most of these storm events?	Impacts for small storm events will be significantly smaller than the design storm.
AA-5	If the flood waters will only be lowered a fraction of an inch in the ten year storm, perhaps a more cost effective method for reducing damage could be found such as flood proofing affected buildings, increasing detention areas, reducing direct stormwater discharges to the river, etc.	Flood proofing and flood storage are discussed in Section 2.
AA-6	Will the dewater supernatant be discharged into the river without cleanup? Into the sewer system without pretreatment? Will the dewater liquor be monitored for hazardous and toxic substances?	Dewatering supernatant will be treated and monitored before returning to Muddy River. See Sections 6 and 7.
AA-7	How will the dewatering site be protected from contamination and what contingency measures will be in place in case of accidents?	Construction Mitigation is discussed in Section 7 and will include requirements for a Contractor's Spill Prevention Control, Containment and Countermeasure Plan. The dewatering methodology selected in Section 2 reduces the possibility of contamination.
AA-8	The Emerald Necklace Environmental Improvements Plan attributes water quality problems to sluggish flow, CSOs, illegal cross connections and high levels of sediment	The Project Objectives in Section 1, design plans in Section 5, mitigation in Section 7, and the Management and Maintenance Plan in Section 8, contain information on how the project objectives will be

EMERALD NECKLACE ENVIRONMENTAL IMPROVEMENTS MASTER PLAN AND PHASE I MUDDY RIVER FLOOD CONTROL, WATER QUALITY, HABITAT ENHANCEMENT, AND HISTORIC REHABILITATION
DRAFT ENVIRONMENTAL IMPACT REPORT

	buildup. How will this project cure all of these ills in the long-term?	attained.
AA-9	Given the flow of the river, high water temperatures through much of the year, and nonpoint source pollutants entering the system, how can the proponent be sure a dissolved oxygen level of 5 mg/l will be consistently attained throughout the system? Won't any gains in water quality gradually wane as the dredging work regresses with the continuing siltation of the river? A decrease in SOD may occur initially but won't this improvement also be lost as new sediments are added during storm events?	Long-term water quality monitoring is included in the Management and Maintenance Plan (Section 8) and is intended to detect changes in water quality. BMPs are also included in the project and are discussed in Sections 5 and 8.
AA-10	The master plan committee should carefully review the landscaping aspect of this project to insure success while being sensitive to the historic facets of the Muddy River parklands, One thing to consider is the planting scheme for the Jamaica Way. Safety/line of sight concerns centering on traffic flow on the roadway may interfere with expectations.	Extensive review of the proposed plans has taken place with the CAC, the agencies, and has been presented to the public. Each section of the EIR contains detailed information on the compatibility of the proposed plans with the FLO design and the historic character of the parklands.
AA-11	It is quite likely the alterations in Phase I will result in a net gain in <i>Phragmites</i> . Far more investigation is warranted if successful elimination of this invasive is to occur in the project area.	The proposed plans included the total removal of the <i>Phragmites</i> by dredging and excavation as discussed in Sections 2, 5, 6, and 7. Follow-up maintenance plans are also included in Section 8.
AA-12	The work within Franklin Park will effect a large user population given the significance of this open space for the surrounding communities. Small details like the bridge over Scarboro Pond, slated to accommodate golf carts and pedestrian, needs careful consideration. Can golf carts and pedestrians safely co-exist? Is the bridge just for golf course patrons? What will the bridge mean for the aesthetics of the pond and surrounding areas?	Not included in this project.

AA-13	The resurrection of Abbotspool is quite commendable but won't using it for stormwater management result in the same eutrophication problem for this new water resource?	Abbotsville Pool is not part of the present plans for the Emerald Necklace. Should this become part of the plans, it will be identified in the MEPA Annual Update that is required annually.
AA-14	Has there been any thought to using the collected runoff for golf course watering needs producing a dual benefit?	Not considered for alternative storage since quantity of storage required and seasonal needs would not match storm runoff.
AA-15	The time line concerning Leverett Pond is not in order. Was the pond dredged? What does the description for 1980 mean? What dredge project are they referring to in the narrative? Why is there a problem with runoff from the ball fields in Daisy Field? Shouldn't ball fields have minimal runoff considering they are pervious, mostly vegetated and of an even topography? Why stabilize the pond edge with riprap---why not use vegetation and bio engineering to stabilize the edge?	Leverett Pond was last dredged in 1963. Erosion is taking place from the non vegetated infield part of the ball field. Shorelines will be stabilized as described in Sections 5, 6, and 7.
LETTER BB- RUBIN AND RUDMAN		
BB-1	[The] use of the Emerald Necklace parcel for staging and lay down is prohibited. The Project proponent must find other land to use for these purposes.	The former Sears parking lot is not listed for staging other than as necessary for daylighting occurring on the site.
LETTER CC – THE EMERALD NECKLACE CONSERVANCY		
CC-1	with numerous privately-proposed developments in the Fenway area which will commence over the next several years. "daylighting" the river at the old Sears parking lot should be the next priority in terms of project sequencing. Brookline and the MBTA lack flood protection unit this occurs.	Project construction staging is discussed in Section 5.
CC-2	In addition the Sears lot should not be utilized as a staging area. This area of the Muddy River should become an improved, open waterway as soon as possible.	See BB-1 and CC-1.
CC-3	..Sediment source reduction /controls along the entire	BMP program is discussed in Section 5.

EMERALD NECKLACE ENVIRONMENTAL IMPROVEMENTS MASTER PLAN AND PHASE I MUDDY RIVER FLOOD
CONTROL, WATER QUALITY, HABITAT ENHANCEMENT, AND HISTORIC REHABILITATION
DRAFT ENVIRONMENTAL IMPACT REPORT

	waterway should be a priority. The project proponents should be aggressive in both establishing a MOA, which commits the necessary resources to reduce or eliminate sediment loading, and that “best management practices” are used in the implementation of this item.	
CC-4	...maintenance of the integrity of existing trees and species where any work is done will be critical. The goal should be no loss of trees and no soil compaction on or near trees. In addition, key trees and areas should be identified, boundaries should be established to the drip line of the canopy, and root lines identified prior to staging and related work. ..The Conservancy supports dredging of the Muddy River but asks that the proponents explore creative methods in order to minimize dredging impacts and dredging that has the least risk of sediment impacts to the Charles River given on-going efforts to clean[] up that waterway.	The inventory and analysis plans locate heritage trees. Many trees are healthy, a portion are in poor to fair condition and volunteer vegetation has altered the original design intent of the Primary and Secondary Periods of Significance. A “no tree removal” policy is counter-productive if the parks are to be restored or rehabilitated. Section –7 addresses protection of vegetation as well as historical features of the parks during construction. A lower impact method of dredging has been selected and is discussed in Section 2.
CC-6	The Muddy River should be returned to its original banks as designed by Frederick Law Olmsted; ie., we support full dredging and efforts to deepen the river in order to improve its hydrology.	Restoration of disturbed shoreline will be in accordance with historic shape and shoreline locations. See Sections 5, 6 and 7 and Appendix I.
CC-7	As this will be a complex and lengthy project, we suggest that an area or several areas along the river be built and established as “models” of bank stabilization, conduits and the like so that the public can see and comment on the scope of work to be accomplished.	The comment is noted.

COMMENT LETTERS



The Commonwealth of Massachusetts

Executive Office of Environmental Affairs

100 Cambridge Street, Boston, MA 02142

D. Noyes
[Signature]

MARGEO PAUL CELLUCCI
GOVERNOR

April 29, 1999

JANE SWIFT
LIEUTENANT GOVERNOR

BOB DURAND
SECRETARY

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CERTIFICATE OF THE SECRETARY OF ENVIRONMENTAL AFFAIRS
ON THE
ENVIRONMENTAL NOTIFICATION FORM

PROJECT NAME : Emerald Necklace Environmental
Improvements Master Plan and Phase I
Muddy River Flood Control, Water
Quality, and Habitat Enhancement
PROJECT MUNICIPALITIES : Boston and Brookline
PROJECT WATERSHED : Charles River
EOEA NUMBER : 11865
PROJECT PROPONENT : Boston Parks and Recreation Department
and Brookline Department of Public Works
DATE NOTICED IN MONITOR : February 10, 1999

Pursuant to the Massachusetts Environmental Policy Act
(MEPA) (M.G.L. c. 30, ss. 61-62H) and Sections 11.05 and 11.06 of
the MEPA regulations (301 CMR 11.00), I hereby determine that
this project requires the preparation of an Environmental Impact
Report (EIR).

Frederick Law Olmsted Sr. created the Boston Park System,
known as the Emerald Necklace, to provide a "ground to which
people may easily go after their day's work is done, and where
they may stroll for an hour seeing, hearing and feeling nothing
of the bustle and jar of the streets." His seven-mile long park
system, designed and constructed between 1878 and 1895, is the
first and historically the most significant urban park system in
the country, if not the world. Olmsted's genius was to combine
the environmental improvement of the Muddy River, then a foul
sewer, with a park system linking residential neighborhoods in
Boston and Brookline. This system of linear parks provides a



profound artistic experience and a democratic meeting place for all citizens.

Olmsted's legacy remains a challenge and an inspiration to us today. His creation has been roughly handled over the years. Erosion has clogged the waterway, causing persistent and damaging floods in adjacent areas. The sediments at the bottom of the river are heavily contaminated. The damming of the Charles River has converted the Muddy River from a tidal estuary to a fresh water river, allowing invasive vegetation such as Phragmites reeds to flourish. Following many years of neglect which damaged the contours, plantings, roadways, and bridges that constitute Olmsted's artistic vision, the work of advocacy groups and municipalities has begun the restoration of the Emerald Necklace.

The purpose of this project is to ensure the continued restoration of Olmsted's Emerald Necklace in its entirety. As described in the Environmental Notification Form, the project involves a range of physical improvements and management practices that will produce flood control, water quality improvements, habitat enhancement, landscape restoration, pedestrian and automobile circulation improvements, and building and bridge restoration along the Muddy River and throughout the Emerald Necklace parks in Boston and Brookline.

The project meets or exceeds the following mandatory EIR review thresholds: direct alteration of 50 or more acres of land (301 CMR 11.03(1)(a)(1)); alteration of one or more acres of bordering vegetated wetlands (11.03(3)(a)(1)(a)) or alteration of ten or more acres of any other wetlands (11.03(3)(a)(1)(b)), provided that a permit is required; and alteration requiring a variance in accordance with the Wetlands Protection Act (11.03(3)(a)(2)). The project requires a Chapter 91 License, a Water Quality Certificate, and a Special Waste Determination from the Department of Environmental Protection. It may also require a variance under the Wetlands Protection Act. The project requires Orders of Conditions from the Boston and Brookline Conservation Commissions (and a Superseding Order of Conditions

April 29, 1999

from DEP if either Order is appealed). Because the project will receive financial assistance from a state agency, MEPA jurisdiction extends to all significant environmental impacts potentially resulting from the project.

This Certificate describes the subjects that must be analyzed and discussed in the EIR for this project. By a separate Certificate, also issued today, I established a Special Review Procedure for this project. This Certificate does not require the EIR to analyze the impacts of certain projects identified in the Master Plan attached to the ENF (for example, dredging in ponds above the Muddy River), as the proponent does not intend to move ahead with this work in the near-term, and background conditions may change significantly before that work is ready to proceed. The proponent should describe the content and schedule for that work in an annual update (see the Certificate Establishing the Special Review Procedure) prior to commencement of the work. Although I am sensitive to concerns about an appearance of segmentation of the project, the pieces of work hereby excluded from the EIR are discrete projects that may proceed independently of the main body of work, or not at all. Further, I expect that the procedures developed during the review, permitting, and implementation of the EIR project will inform and likely simplify the review of those later projects.

SCOPE

General

As modified by this scope, the EIR should conform to the general guidance for outline and content contained in section 11.07 of the MEPA regulations. The EIR should also reprint the comment letters received on this project and address the issues raised in them, to the extent that the comments are within the subject matter jurisdiction of MEPA. The proponent should circulate the EIR to any state agencies from which it will seek permits or approvals, and to those parties listed at the end of this Certificate as having submitted written comments. In

addition, the proponent should make a reasonable number of copies of the EIR available on a first come, first served basis.

Alternatives

- 5 [As further detailed below, the EIR should expand on the alternatives analysis included in the ENF. The purpose of the alternatives analysis is to consider what effect changing the parameters of a project will have on the environment, keeping in mind that the objective of the MEPA review process is to avoid or minimize damage to the environment to the greatest extent
- 6 [feasible. The EIR should analyze the no-action alternative to establish baseline conditions.

Project Permitting

- 7 [The EIR should include a brief discussion of each state permit or agency action required for the proposed project. The EIR should discuss how the project will meet the requirements and performance standards of each state permit.

Flood Control

- 8 [The EIR should identify specifically which proposed actions are intended to prevent or minimize flooding. It should describe the potential impacts of flood control activities and impacts
- 9 [that have been considered that would avoid or minimize damage from flood control activities. It should quantify additional
- 10 [flood water storage capacity to be gained by each area of proposed dredging intended to add to flood storage capacity. It
- 11 [should identify the locations of additional storage capacity areas. Where the project proposes clearing or expanding
- 12 [culverts, the EIR should specify the activities to be undertaken and the benefits projected to be gained. The EIR should include
- 13 [the sequence in which flood control projects will be implemented and should describe the criteria used to assign priority to flood control projects.

Stormwater/Water Quality Improvements

The EIR should describe in detail measures that will be undertaken to improve water quality. It should identify specific measures to be implemented and their locations. It should indicate the sequence in which they will be implemented and should relate that sequence to the schedule for dredging to ensure that sedimentation prevention measures are in place prior to sediment removal. It should describe potential impacts that may result from implementation of any stormwater or water quality improvements. The EIR should include a comprehensive maintenance management plan to be implemented by Boston and Brookline throughout the watershed of the Muddy River to ensure continuing effectiveness of any stormwater or water quality improvement measures and prevent new siltation, and it should specifically identify funding sources for ongoing, long-term implementation of the maintenance plan.

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Wetlands Impacts/Variance Requirement

The EIR should identify all wetland resource areas, including riverfront area, and buffer zones and delineate them on a reasonably scaled plan. The EIR should identify the significance of the resources, including value to flood control, storm damage prevention, pollution prevention, and fisheries and wildlife habitat.

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The EIR should quantify in appropriate units the project's estimated impact on each resource area. It should describe the nature of all likely impacts that cannot be avoided, including whether they are temporary or permanent impacts, and including impacts from proposed bridge restoration work. It should provide the information requested in DEP's comment letter regarding the project purpose(s) to be served by each instance of wetland alteration.

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Dredging

23 [The ENF proposes a substantial volume of dredging which may have significant impacts on the natural environment and on historic resources. The EIR should describe the potential impacts of the proposed dredging and indicate the location of each area proposed to be dredged. It should describe the purpose(s) of each area of dredging and alternatives to dredging for each area or groups of similar proposed dredging sites. In particular, the EIR should compare the benefits of bank-to-bank, channel, and spot dredging in terms of the goals of the proposed project. Wherever dredging emerges as the preferred alternative, the EIR should analyze a range of dredging techniques, describe the circumstances under which each would be the preferred alternative, and indicate the criteria it is using to select dredging techniques for the project's various dredging areas.

27 [The ENF indicates that overdredging will occur in some areas. The EIR should clarify the purpose of any proposed overdredging and describe how the project will avoid damage to the clay liner during overdredging.

Dredged Material Management and Disposal

28 [The EIR should describe in detail how the proponent will manage dredged material. The ENF suggests that dredged material could be stored and dewatered on the Sears parking lot site. The EIR should analyze various locations in terms of their technical suitability, impacts on traffic, residents, and historic resources.

29 [It should describe the proponent's plans for identifying and managing contaminated sediments, including proposed testing and on-site treatment and techniques for segregating contaminated sediments.

30 [The EIR should identify landfills that may be able and willing to accept dredged material from the project. As

April 29, 1999

recommended by DEP, the EIR should include appropriate out-of-state landfills.

Phragmites Control

In November, 1994, the Boston Parks and Recreation Department filed an ENF for a Phragmites Control and Park Restoration Program for the Back Bay Fens and Riverway (EOEA #10215). That ENF proposed (1) a demonstration project to evaluate the effectiveness of several methods of Phragmites control, (2) full implementation of a Phragmites control program using a method selected based on the results of the demonstration program, and (3) restoration of the historic landscape design. A Phase I waiver allowed implementation of the demonstration project prior to the preparation of the EIR. I understand that the demonstration project has been undertaken and that the results are available. The EIR for the project has not been filed. Since the project described in that ENF is similar to the project currently under review, for procedural purposes, I will consider the file on the earlier ENF to be closed. However, the issues raised during its review remain to be resolved.

The EIR required by this Certificate should describe the methodology and results of the demonstration project and indicate how those results will inform the alternatives analysis for Phragmites control in this project. It should describe the purpose and potential impacts of any proposed Phragmites control activities. It should describe alternatives considered and explain why any alternatives are no longer under consideration. It should provide information related to the projected effectiveness of the preferred alternative (which is described in the ENF currently under review as dredging). It should also describe the maintenance plan to be implemented to ensure that the Phragmites, however it is removed, does not return. It should identify funding sources for implementing the maintenance plan.

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Habitat Improvement and Rare Species

36 Throughout the ENF there are references to activities to be undertaken to improve wildlife habitat. The EIR should identify which activities are intended for that purpose and document what improvements to wildlife habitat will result from these activities, what impacts -- whether positive or negative -- are likely to result from those activities, and what alternatives have been considered that may avoid or minimize impacts from these activities.

The Natural Heritage and Endangered Species Program (NHESP) indicates that two rare species, the "threatened" Threespine Stickleback (*Gasterosteus aculeatus*) and the "endangered" Pied-billed Grebe (*Podilymbus podiceps*) occur in the area of Olmsted Park, and that it will need to review plans for dredging and restoring this area to ensure that these species are not harmed. NHESP also notes that, contrary to the statement in the ENF, it has no record of Spotted Turtles occurring in the project area.

37 [The EIR should describe steps that the project will take to avoid
38 [impacts to rare species. The proponent should consult with NHESP
during the development of the EIR.

Historic Resources and Landscape Restoration

The project is located within the Olmsted Park System Historic District which is listed in the State and National Registers of Historic Places. The ENF proposes an ambitious, long-term plan to restore the historic designed park landscape, following completion of the flood control portion of the project.

39 [The EIR should describe the landscape restoration project in greater detail, including the proposed sequence of restoration projects and plans that demonstrate at least a conceptual level development. I anticipate that this portion of the EIR will consist of the "Emerald Necklace Master Plan" prepared by Walmsley/Pressley in 1990 as required by the Department of Environmental Management's Olmsted Historic Landscape Preservation Program for Brookline and Boston.

The EIR should identify any impacts on historic resources -- whether positive or negative -- that may result from the implementation of this project, as well as any alternatives that have been considered that may avoid or minimize damage to historic resources.

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The Massachusetts Historical Commission (MHC) has requested information regarding the potential impact of changes in water level on river banks and vegetation and regarding the age of the underwater stop log structure proposed to be removed. The proponent should work with MHC on these questions, and on any others MHC may have, as well as with the Brookline Preservation Commission and the Boston Landmarks Commission, to ensure that the project avoids damage to historic resources.

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Circulation Improvements

The ENF indicates that the project will include improvements to pedestrian, bicycle, and automobile circulation in and around the parks. The EIR should describe the proposed improvements in greater detail, including the proposed sequence of circulation improvement projects and plans that demonstrate at least a conceptual level development and include proposed stormwater management improvements in roadways and pathways. It should describe potential impacts on the environment of the proposed circulation improvements, alternatives that have been considered, and the sequence in which the improvements are proposed to be undertaken.

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Charlesgate

The proponent has requested that the Special Review Procedure include a provision allowing the Charlesgate portion of the project to proceed in advance of the rest of the project. Based on my current understanding of that proposed work, this portion of the project should provide significant public safety benefits without significant impacts on the environment. Therefore, provided (as described below) that the proponent provides sufficient information in the Draft EIR regarding this

April 29, 1999

portion of the project, I will allow work in the Charlesgate area to commence following review the Draft EIR and before preparation of the Final EIR is complete. In the Certificate on the Draft EIR I may make separate findings regarding the adequacy of the description of the Charlesgate portion of the project and the rest of the EIR.

45 The EIR should detail the proposed activities in the
Charlesgate area, their likely impacts on the environment, any
alternatives to that have been considered and an analysis of
those alternatives, a schedule, and proposed mitigation measures
46 for any damage to the environment that may occur. It should
include a construction mitigation plan, particularly regarding
potential traffic impacts. It should include site plans at an
47 appropriate scale showing the boundaries of the proposed project
area, as well as wetland resource areas and their buffer zones.
48 It should include all information that the proponent will be
required to provide to the Federal Emergency Management Agency
(FEMA) for its review of this part of the project. I note that
the proponent will have to satisfy DEP and other permitting
49 agencies that this phase can be permitted separately. The Draft
EIR should contain a proposed Section 61 Finding relative to this
phase.

Construction Impacts

50 The EIR should describe impacts likely to result from
project construction and steps that will taken to avoid or
minimize construction impacts. It should describe in detail the
51 measures that the proponent will take to protect historically and
environmentally significant landscape features and vegetation.
52 It should also describe potential impacts on traffic and
recreational use of the parks, especially during the dredging
portion of the project, and steps that will be taken to avoid or
minimize these impacts wherever feasible.

Diesel powered construction equipment is a significant source of air pollution in the Commonwealth. In 1998, the

April 29, 1999

Central Artery Project, in cooperation with EPA Region I, EOE, Northeast States for Coordinated Air Use Management (NESCAUM), and DEP, with assistance from the Manufacturers of Emission Control Association (MECA), launched the Clear Air Construction Initiative. That program retrofits heavy construction equipment used at major public works/infrastructure projects with pollution control devices targeted at reducing diesel emissions and the localized adverse health impacts and nuisance conditions they may create. The EIR should describe steps that the proponent will take to minimize the project's adverse impacts on air quality, including ensuring the use of retrofitted construction equipment.

53

Maintenance and Monitoring

The Commonwealth is committed to making a substantial investment in the implementation of this project. To ensure that the capital investment is protected, the EIR should describe in detail the proponent's maintenance management plan for maintaining the restored condition of the Muddy River and the Emerald Necklace parks. I expect that these plans will include a commitment to a detailed schedule, including an ongoing annual schedule, of best management practices to create and maintain high quality stormwater runoff, which will benefit both water quality and prevention of sedimentation. It should describe ongoing measures to prevent the recurrence of invasive vegetation that has been removed. It should include commitments to maintain the restored historic landscape and structures. It should include protocols for regular monitoring of environmental conditions to provide a continuous feed-back loop by which the effectiveness of management practices can be measured. Finally, it should define the proportional financial responsibilities of the City of Boston and the Town of Brookline for all short-term and long-term maintenance and monitoring measures related to the project.

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Mitigation

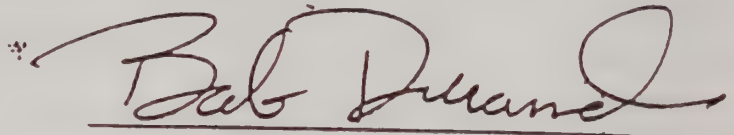
The EIR should include a summary and appropriate commitments

for each project impact within MEPA jurisdiction described in the EIR. This section should form the basis for the Proposed Section 61 Finding which will appear in the Final EIR.

?

April 29, 1999

Date



Bob Durand

Comments received:

- Barton, Joe ✓
- Boston GreenSpace Alliance/Friends of the Muddy River ✓
- Boston Redevelopment Authority:
- Boston Water and Sewer Commission.
- Brookline Village Action Groups
- ✓Brookline Conservation Commission
- ✓Burke, Edward J.
- ✓Charles River Watershed Association
- ✓City of Boston, The Environment Department
- ✓Cutler, Edward B.
- ✓Demakis, Paul C.
- ✓Department of Environmental Protection
- ✓Division of Fisheries and Wildlife
- ✓Federal Emergency Management Agency
- ✓Historic Massachusetts
- ✓Katz, Pauline R.
- ✓Koch, Harriet F.
- ✓MASCO
- ✓Massachusetts Historical Commission
- Massachusetts Historical Commission *a second?*
- ✓Muddy River Action Group
- ✓Natural Heritage and Endangered Species Program
- ✓Ransil, Bernard J.
- ✓Restore Olmsted's Waterway
- Riverway Square Condominium Trust ✓
- ✓Riverways Program

EOEA #11865

ENF Certificate

April 29, 1999

✓Rubin & Rudman LLP
✓The Emerald Necklace Conservancy

BD/LER/lr



The Commonwealth of Massachusetts
Executive Office of Environmental Affairs
100 Cambridge Street, Boston, MA 02202

B

ARGEO PAUL CELLUCCI
GOVERNOR

JANE SWIFT
LEUTENANT GOVERNOR

BOB DURAND
SECRETARY

April 29, 1999

Tel. (617) 727-9800
Fax (617) 727-2754
<http://www.magnet.state.ma.us/envir>

CERTIFICATE OF THE SECRETARY OF ENVIRONMENTAL AFFAIRS
ESTABLISHING A SPECIAL REVIEW PROCEDURE

PROJECT NAME : Emerald Necklace Environmental
Improvements Master Plan and Phase I
Muddy River Flood Control, Water
Quality, and Habitat Enhancement
PROJECT MUNICIPALITIES : Boston and Brookline
PROJECT WATERSHED : Charles River
EOEA NUMBER : 11865
PROJECT PROPONENT : Boston Parks and Recreation Department
and Brookline Department of Public Works
DATE NOTICED IN MONITOR : February 10, 1999

Pursuant to the Massachusetts Environmental Policy Act (M.G.L. c. 30, ss. 61-62H) and Sections 11.06 and 11.09 of the MEPA regulations (301 CMR 11.00), I hereby establish a special review procedure for the evaluation and review of this project. I have established this special review procedure to ensure an appropriately high level of public participation in the review and implementation of this project.

Project Description

As described in the Environmental Notification Form, the project involves a range of physical improvements and management practices that will produce flood control, water quality improvements, habitat enhancement, landscape restoration, pedestrian and automobile circulation improvements, and building and bridge restoration along the Muddy River and throughout the Emerald Necklace parks in Boston and Brookline.



Special Review Procedure

The proponent has requested that the project undergo a special review procedure that accommodates the particular circumstances of the project. Taking into consideration the information in the ENF, comment received on the project, and this office's experience with tailored project reviews, I concur that a project-specific procedure, as provided for in Section 11.09 of the MEPA regulations, will enhance the review of this project. However, the special review procedure described in this Certificate varies in some significant ways from the proposal presented in the ENF.

As specified in the Certificate on the ENF for this project, also issued today, the proponent has requested that the Charlesgate portion of the project be allowed to move forward in advance of the completion of the project-wide environmental review of this project. Provided that the analysis of that portion of the project can be deemed adequate following review of the Draft EIR, I will allow the Charlesgate portion of the project to proceed to permitting at that time.

The proponent intends to construct the project in phases over the course of approximately fifteen years. Annually following commencement of construction, the proponent will file with the MEPA Office and circulate to commenters on the ENF or EIRs an update detailing the status of physical improvements and management practices, and summarizing monitoring information on current environmental conditions in the Emerald Necklace, particularly in the Muddy River. These updates will replace any notice of project change that might otherwise be required to be filed due to lapses of time in carrying out the project, pursuant to Section 11.10 of the MEPA regulations. The EIR should include a proposed Scope for the first such update.

If the proponent wishes to change any provision in this special review procedure, it may file a request for modification of the special review procedure in the form of a Notice of Project Change.

April 29, 1999

The proponent will ordinarily submit a draft of any review document called for in the special review procedure to the CAC at least one month prior to filing the review document with my office. The CAC may suggest changes or additions to the review document and may file its comments with my office prior to or when the proponent files the review document. The proponent will provide administrative support to the CAC.

After completion of construction, the CAC may consult with the Secretary and the proponent to determine whether it will have any role in any future actions on the project.

April 29, 1999

Date _____

Bob Duman

Bob Durand

Secretary of Environmental Affairs

Date _____

Thomas M. Menino
City of Boston

Date _____

Joseph Geller
Town of Brookline

Comments received:

Barton, Joe

Boston GreenSpace Alliance/Friends of the Muddy River
Boston Redevelopment Authority

Boston Redevelopment Authority

Boston Water and Sewer Commission

Brookline Village Action Groups

Brookline Conservation Commission

✓ C
EOEA No. 11865

RECEIVED JH

APR 22 1990

Comments addressed to Laura Rome, MEPA analyst, on
The Environmental Notification Form for the Emerald Necklace
Environmental Improvements Master Plan Phase 1 Muddy River Flood
Control, Water Quality and Habitat Enhancements **MEPA**

The area from the Stoneybrook Gatehouses to the Boylston Street Bridge in the Back Bay Fens section of the Emerald Necklace is a very unusual and unique wildlife refuge. There are over 160 species of birds that have been sighted in this area. There are numerous mammals and turtles and large carp in this section of the park and river. Daily, thousands of urban dwellers and suburban visitors walk, cycle, jog, garden, sunbathe, and/or just stand and watch and listen to the sounds of the many birds that inhabit this parcel. These wonderful interactions with nature seem to fulfill, at its best, the hopes of Olmsted for this park; urban dwellers experiencing the wonders of this natural setting. The wildlife is a major source of enjoyment for this community.

The projected Master Plan for the Back Bay Fens section of the Emerald Necklace does not even describe this treasure or the important role that it plays in the abutting community as well as the larger urban community. No one has determined what ~~the~~ characteristics of this area has produced such a bounty of wildlife. Every description in the Master Plan describes the area as being in need of major improvements. The water is no good. The plants are no good. They want to change it all. They will improve everything and create greater diversity of wildlife. This is all stated without presenting any idea as to why this area is so successful.] 1

I have been to parks all around the city and to many wildlife refuges sanctioned by the State and I have never encountered the variety and quantity of wildlife that I find in the Fens. I've seen turtles with shells that have a 3-foot diameter come out of the river into the park to lay eggs. I have seen Great Blue Herons in the mudflats fishing. I have seen Baltimore orioles singing and mating. I have watched gosling mature. I have seen muskrats the size of a dog. I've watched and observed birds build their nests and watched newborn birds nurtured and watched them fly for the first time. I've seen hawks catch small mammals and feed on them. And, all this is in the middle of a city, in an urban setting, accessible to many people who only have this

one place to experience the joys of this wildlife. This should be perceived as a treasure. We should think long and hard and be really sure of what we are doing before we interfere with what appears to be a very successful natural wildlife habitat. The claims that this project will increase wildlife in this park are unfounded, speculative, and obscene.

Do not destroy this natural environment without first determining why the animal habitat works so successfully. Man's intervention into natural settings always has unforeseen and often deleterious consequences. Please do not destroy this treasure.

The rationale for the dredging and removal of the Phragmites reeds would have to be for a result that is absolutely necessary to take the risk of losing of this treasure. The justification for these actions is said to be flood mitigation. Both the Army Corps of Engineers and the Camp, Dresser, McGee studies of the flooding indicate that this dredging would result in no significant lowering of the level of the river during a flood event. One says inches and the other says none. There has been no hydrology model to argue the absolute necessity of this work. The current engineering evidence suggests that dredging has little to no value in the Back Bay Fens. In spite of this, the engineers recommend the action. It appears to be a prior political requirement of any study. The removal of the Phragmites reeds has a long history. It has been a political priority for years and has met with substantial resistance from the local community.

By park regulars, the reeds are perceived to provide the shelter and privacy that many birds seek. Many sightings of birds on the river are seen through the reeds. The reeds also provide a backdrop of green when people are in the park, enclosing one in the natural setting of the park and buffering one from the urban noises. At the times when the reeds have been absent due to fire, defoliation, or manual cutting, the visual impact on the park has been tremendous. There is the noise of the cars on the roadways, which would normally be buffered by the reeds. The constant movement of cars in the distance catches the eye and distracts one from the natural setting. When the reeds are gone, the smell of the water is overwhelming. The reeds play an essential role in cleaning the water and controlling the odor. Complete removal of all the reeds at one time will destroy our ability to use and enjoy this park.

If this foolish undertaking can't be stopped, it should be a requirement to remove alternating sections of reeds, which offset with sections removed on the opposite bank. This would keep the green wall and possibly allow some of the wildlife to remain. This is similar to the compromise that the state negotiated between the park users and the City the last time the City attempted to remove the Phragmites reeds. It is critical that the replacement plantings be a reed type plant. Given that fact, it seems absurd to remove this one plant and replace it with a similar plant.

4

One criteria of the dredging should be that when it is completed the river bottom and the configuration of the river should be sustainable. We need to have hydrology studies done to determine whether the specified dredging will result in a riverbed that can be sustained given the flow rate of this river. The worst case scenario would be that 20 – 30 years from now there would be another proposal to dredge this river again.

5

The most conservative approach would be to daylight the constricted areas of the river to find out what configuration the riverbed would take. Wait five years after daylighting and then dredge. Clearly daylight at the former Sears parking lot to the top of Fens Pond and from the Fens Pond through Higginson Circle should be the highest priority. Also a larger culvert at Storrow Drive where the Muddy River flows into the Charles is needed to restore the natural flow of the river.

6
7

Overall, most of the actions proposed to improve the Emerald Necklace should be supported. To mitigate flooding, the constrictions of the river should be removed immediately, daylighting wherever it is possible. The dewatering facilities and staging areas must be located at a site other than where the river is to be daylighted. The river bed should be dredged above the constricted area at the former Sears parking lot. The reeds have invaded and closed down the river due to the manmade constriction that slowdown the flow rate. Once the constrictions are removed, the river should be returned to a more natural configuration.

Some specific comments on the text of "The Environmental Notification Form for the Emerald Necklace Environmental Improvements Master Plan Phase 1 Muddy River Flood Control, Water Quality and Habitat Enhancements" submitted by the Boston Parks and Recreation department.

My Primary interest and concerns are with project components that effect the area in the Back Bay Fens.

On page 3. "A study conducted for FEMA, stated that the dredging of a single channel within the Lower fens should be part of a flood mitigation strategy."

This study by the Army Corps of Engineers said that this dredging would lower the river by ".1 feet", i.e. inches. A subsequent study by Camp Dresser & McKee Inc for the Executive Office of Environmental Affairs "Proposed Phase I Flow Improvements in the Muddy River" states that this dredging will not lower the river at all. Boston Parks and Recreation lobbied heavily, asking community groups to support the dredging the in the Back Bay Fens. Most community groups thought that they were supporting the dredging of the river above the former Sears parking lot. The dredging in the Back Bay Fens to widen the river behind the Fenway Victory Gardens will be vigorously opposed.

On page 5 . "The proposed project will.....restore aquatic and riparian habitat,....'

On page 16. "The proposed dredging project will provide significant habitat.....improvement."

Section 4-5. Protection of Wildlife Habitat.

You'd think that fish and ducks could vote for all the benefits they are going to receive from the Boston Parks and Recreation Dept. proposal. The Back Bay Fens is a unique and rare setting. There is some very wonderful combination of conditions that exists here which create an important and significant habitat for wildlife, right in the middle of an urban environment. There are an extraordinary variety of birds, and animals in this area. This place is a treasure to City people. The singing of birds and the natural setting provides the kind of experience for which Olmsted hoped from a park. By law, the birds and animals aren't rare or endangered. But they are rare for city dwellers and they are endangered by this project. No amount of pontification about increasing and improving this habitat of nature by engineers whose main concern is to dredge will make this anything but a disaster for our wildlife. The engineers do not know why this area is so successful and have not explained what makes it work. So for them to come into this habitat and

make extensive changes in the configuration of the watercourse and the vegetation and suggest that there will be more and diverse animal populations is absurd. They have to determine why this area is so successful and then not interfere with what constitutes the elements that have made this so successful a habitat for birds and animals.

On page 13. "In 1997, the USGS reported that the meandering parts of to be approximately 1.6 feet deep with some locations of three feet."

I've read the same report and there are many areas that are 7 feet deep. This statement is misleading. It is not clear from any of the information that has been made public, what the configuration of the river will be after the proposed dredging. In the Back Bay Fens, the river is wide and at points seven feet deep with such a channel meandering through the reeds. It is true that the reeds have narrowed the width of the river but this is because the flow of the river could not sustain the width to which it had been dredged. It seems that the reeds are doing what nature intended, moving the banks of the river closer together. But still most of the river is more than 30 feet wide. The question now is what constitutes the bank of the river. When I first started gardening in the Back Bay Fens in the early 80s, my garden was next to the river. Now that site is 50 feet from the water. So where is the bank up to which we are dredging? The one that exists today or one that existed so time in the past. Since rivers naturally change their course and thereby their banks, there should be Laws and Decisions that define how this is to be determined. We need to have an opinion on this.

Sincerely,

Joe Barton
9 Concord Square #G
Boston, MA 02118

- ___ Yellow Warbler - S/?N
- ___ Chestnut-sided Warbler - M
- ___ Magnolia Warbler - M
- ___ Cape May Warbler - M
- ___ Black-throated Blue Warbler - M
- ___ Yellow-rumped Warbler - M
- ___ Black-throated Green Warbler - M
- ___ Blackburnian Warbler - M
- ___ Pine Warbler - M
- ___ Prairie Warbler - M
- ___ Palm Warbler - M
- ___ Bay-breasted Warbler - M
- ___ Blackpoll Warbler - M
- ___ Black-and-white Warbler - S
- ___ American Redstart - M
- ___ Ovenbird - M
- ___ Northern Waterthrush - M
- ___ Connecticut Warbler - M
- ___ Mourning Warbler - M
- ___ Common Yellowthroat - S/?N
- ___ Wilson's Warbler - M
- ___ Canada Warbler - M
- ___ Scarlet Tanager - M
- ___ Northern Cardinal - Y/?N
- ___ Rose-breasted Grosbeak - M
- ___ Indigo Bunting - M
- ___ Eastern Towhee - M
- ___ American Tree Sparrow - M
- ___ Chipping Sparrow - M
- ___ Field Sparrow - M
- ___ Savannah Sparrow - M
- ___ Fox Sparrow - W
- ___ Song Sparrow - Y/N
- ___ Lincoln's Sparrow - M
- ___ Swamp Sparrow - M
- ___ White-throated Sparrow - W
- ___ White-crowned Sparrow - M
- ___ Dark-eyed Junco - M
- ___ Bobolink - M
- ___ Red-winged Blackbird - Y/N
- ___ Eastern Meadowlark - M

- ___ Rusty Blackbird - M
- ___ Common Grackle - S/N
- ___ Brown-headed Cowbird - S
- ___ Orchard Oriole - M
- ___ Baltimore Oriole - Y/N
- ___ House Finch* - Y/N
- ___ American Goldfinch - Y/N
- ___ House Sparrow* - Y/N

BIRDS OF THE BACK BAY FENS AND VICINITY

BOSTON, MASSACHUSETTS

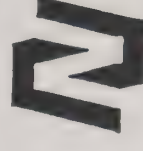


by
Gwilym S. Jones
&
Aaron Roth

Special Publication #3
(1st Revision)



Northeastern University
Boston, Massachusetts



Frederick Law Olmsted created a park system for the people of Boston, including much of the area covered by this checklist. The Back Bay Fens and Victory Gardens have a variety of habitats, including mudflats, cattails, reeds, shrubs, trees, and open lawns. The abundance of insects and seed and fruit producing plants provide food for a large variety of birds and the Muddy River, which spans both areas, supports a diverse fish fauna which is inviting to fish-eating birds. This variety of habitats and foods entices birds to feed, nest and/or rest, whether they stay for a season or migrate through Boston. Likewise the park-like areas on Northeastern University's campus attracts all but the fish-eating birds while the urban rooftops, ledges, and chimneys offer nesting and roosting sites for particular species.

This checklist includes only those species whose occurrence have been verified in the Back Bay Fens, Victory Gardens, or on the Northeastern University campus. It has been prepared for those who live in or pass through this area.

If you wish additional copies of this checklist, write to Gwilym S. Jones, Director, Center for Vertebrate Studies, Department of Biology, Northeastern University, Boston MA 02115

GSI, 1 June 1998

drawings-John P. Kelly

Center Vertebrate Studies logo-Karen Ann Jones

Y (year around), W (winter), S (summer), N (nesting)

M (migrant), O (occasional), * not native

___ Common Loon - O (fly over)
 ___ Pied-billed Grebe - M
 ___ Double-crested Cormorant - Y
 ___ Great Blue Heron - Y
 ___ Great Egret - O
 ___ Green Heron - S
 ___ Black-crowned Night-Heron - Y
 ___ Mute Swan* - O
 ___ Snow Goose - W
 ___ Canada Goose - Y/N
 ___ Wood Duck - M
 ___ Green-winged Teal - M
 ___ American Black Duck - W
 ___ [American Black Duck/Mallard hybrid] - Y/N
 ___ Mallard - Y/N
 ___ Domestic Duck - O
 ___ Northern Pintail - M
 ___ Northern Shoveler - W
 ___ Gadwall - W
 ___ American Wigeon - W
 ___ Canvasback - M
 ___ Ring-necked duck - M
 ___ Lesser Scaup - M
 ___ Bufflehead - M
 ___ Hooded Merganser - W
 ___ Common Merganser - M
 ___ Turkey Vulture - O (fly over)
 ___ Osprey - O
 ___ Bald Eagle - O (fly over)
 ___ Northern Harrier - M
 ___ Sharp-shinned Hawk - M
 ___ Cooper's Hawk - M
 ___ Broad-winged Hawk - M
 ___ Red-tailed Hawk - Y
 ___ American Kestrel - Y/N
 ___ Merlin - M
 ___ Peregrine Falcon - Y/N
 ___ Gyrfalcon - O (fly over)
 ___ Virginia Rail - M
 ___ Sora - M

___ Common Moorhen - M
 ___ American Coot - W
 ___ Killdeer - S
 ___ Greater Yellowlegs - M
 ___ Lesser Yellowlegs - M
 ___ Solitary Sandpiper - M
 ___ Spotted Sandpiper - M
 ___ Semipalmated Sandpiper - M
 ___ Western Sandpiper - M
 ___ Least Sandpiper - M
 ___ Short-billed Dowitcher - M
 ___ Common Snipe - M
 ___ American Woodcock - M
 ___ Laughing Gull - O
 ___ Bonaparte's Gull - O
 ___ Ring-billed Gull - Y
 ___ Herring Gull - Y
 ___ Great Black-backed Gull - Y
 ___ Rock Dove* - Y/N
 ___ Mourning Dove - Y/N
 ___ Budgerigar* - O
 ___ Yellow-billed Cuckoo - O
 ___ Great Horned Owl - W
 ___ Snowy Owl - W
 ___ Barred Owl - M
 ___ Long-eared Owl - W
 ___ Northern Saw-whet Owl - M
 ___ Common Nighthawk - S/N
 ___ Chimney Swift - S/N
 ___ Ruby-throated hummingbird - M
 ___ Belted Kingfisher - S
 ___ Red-bellied Woodpecker - M
 ___ Yellow-bellied Sapsucker - M
 ___ Hairy Woodpecker - M
 ___ Downy Woodpecker - Y/N
 ___ Northern Flicker - S
 ___ Olive-sided Flycatcher - M
 ___ Eastern Wood-Pee-wee - S
 ___ Yellow-bellied Flycatcher - M
 ___ Acadian Flycatcher - M
 ___ Willow Flycatcher - M

___ Least Flycatcher - M
 ___ Eastern Phoebe - S/N
 ___ Great Crested Flycatcher - M
 ___ Eastern Kingbird - S/N
 ___ Purple Martin - M
 ___ Tree Swallow - S/N
 ___ Northern Rough-winged Swallow - S/N
 ___ Barn Swallow - M
 ___ Blue Jay - Y/N
 ___ American Crow - Y/N
 ___ Fish Crow - O
 ___ Black-capped Chickadee - Y/N
 ___ Tufted Titmouse - W
 ___ Red-breasted Nuthatch - M
 ___ White-breasted Nuthatch - W
 ___ Brown Creeper - M
 ___ House Wren - S/N
 ___ Golden-crowned Kinglet - M
 ___ Ruby-crowned Kinglet - M
 ___ Blue-gray Gnatcatcher - M
 ___ Veery - M
 ___ Gray-cheeked Thrush - M
 ___ Swainson's Thrush - M
 ___ Hermit Thrush - M
 ___ Wood Thrush - M
 ___ American Robin - Y/N
 ___ Gray Catbird - S/N
 ___ Northern Mockingbird - Y/N
 ___ Brown Thrasher - M
 ___ Cedar Waxwing - S/N
 ___ Northern Shrike - M
 ___ European Starling* - Y/N
 ___ Solitary Vireo - M
 ___ Yellow-throated Vireo - M
 ___ Warbling Vireo - S/N
 ___ Red-eyed Vireo - M
 ___ Blue-winged Warbler - M
 ___ Golden-winged Warbler - M
 ___ Tennessee Warbler - M
 ___ Nashville Warbler - M
 ___ Northern Parula - M

D

Boston GreenSpace Alliance
44 Bromfield Street 207
Boston, MA 02108
(617) 426-7980

Friends of the Muddy River
22 Bowker Street, Brookline
107 Queensberry St., Boston
617 734-2741

April 22, 1999

Secretary Bob Durand
Executive Office of Environmental Affairs
100 Cambridge Street, 20th Floor
Boston, MA 02202

Attention: MEPA Office
EOEA No. 11865
Laura Rome

RECEIVED
APR 22 1999
MEPA

Dear Secretary Durand:

On behalf of the Boston Greenspace Alliance and the Friends of the Muddy River I submit the following comments on the ENF for the Emerald Necklace Environmental Improvements Master Plan and Phase 1 Muddy River Flood Control, Water Quality and Habitat Enhancement. This has been long in coming, long advocated for, and its progress is very gratifying indeed. Nonetheless we have some areas of concern.

Project Management

The bridges restoration, "Bridging the Emerald Necklace" is being invoked as a management model for this larger joint venture of Brookline and Boston. The four bridges look great but the park, primarily the Riverway, was used as a parking lot and a staging area for the work of the contractor. On one occasion there were as many as 13 trucks and cars parked on park land and many of these remained throughout the weekend.

Staging areas for the Emerald Necklace restoration will be a problem and there needs to be a team of people charged with managing the contractors and protecting park land from unnecessary degradation. Staging areas should be paved surfaces, such as the areas between Boylston Street and Brookline Avenue near the Fenway which have been slated for redevelopment. Perhaps some side streets can be closed temporarily to provide staging areas. We request that the Secretary require Boston and Brookline to designate a project management team to police the contractor or contractors, and to respond to the concerns of citizens.

In cases where heavy equipment must impact park land, restoration should be meaningful, including aeration of the impacted land areas. Park contracts usually call for restoration but this requirement is often not enforced.

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Schedule 2 Rare Species

4 Schedule 2 of the ENF (pages 10 and 11) commits to mitigating the impacts on rare species in Olmsted Park. This mitigation should apply to the whole of the Emerald Necklace, and not just "rare species." We are concerned about the conservation of natural and wildlife resources of the park. Christopher Leahy, Conservation Director for the Massachusetts Audubon Society wrote an addendum to the original Walmsley-Pressley landscape restoration plan entitled, "Some Ecological Values to be Considered in the Restoration of Boston's Emerald Necklace Park," August 1989. Mr. Leahy and Mass. Audubon have confirmed by telephone that they are willing to be a resource to the managers of the Emerald Necklace Restoration enterprise, in terms of the bird populations, as well as the turtles, fish and other wildlife.

Gary Koller, the famous tree authority at the Arnold Arboretum has already intervened to save trees in the Emerald Necklace. We recommend that he be consulted about protecting the trees. None of the hundred year old trees are expendable. They have survived at least two dredgings already. They have to be protected. In addition about 20 of the hundred year old trees on the Boston side of the Riverway have received conservation grants from the DEM Releaf agency (Urban Heritage Tree Grants) which was told their life expectancy with appropriate conservation, is "indefinite." Brookline has never applied for help for any of the trees on the Brookline side of the Muddy River but there are some truly remarkable trees on the Brookline side. They are in good condition. We need special attention to the trees. Construction work which is ongoing now by the MWRA has resulted in the loss of and damage to valuable trees which was completely unnecessary.

The LadyBird Johnson wildlife preservation project in Austin, Texas utilized a system whereby each tree was valued based on its nursery value, and this value was affixed to the contract. The contract with the construction company specified that the contractor would pay damages to the value assigned if a particular tree was harmed in any way. In view of the extraordinary trees, and other resources in this National Register property we would like to see the LadyBird Johnson system used here.

Mark Chandler, Research Biologist on the staff of the New England Aquarium has expressed his willingness to advise about fish and turtles and other fresh water animals.

We recommend that the Secretary require Boston and Brookline to consult with these experts and incorporate their recommendations into their work plans. Introducing the findings of experts into the work plans will reassure the public that natural and wildlife resources will not be lost.

Project Elements 2.0

2.3.7 commits to a public process with respect to any changes to Netherlands Road which is gratifying. The Brookline CAC which reviewed the landscape master plan neglected to have a hearing which dealt with this issue.

2.3.8 Water Edge at Island Bridges

Exceptional trees should not be removed in the Netherlands Road "island" area, and this was agreed to in meetings with citizens. This area has a considerable number of very beautiful oak trees which appear to have been seeded from the Olmsted originals, along with several originals. We agree with the goal of using the Olmsted planting lists which are more extensive than the planting lists recently put out by the Boston Park Department. But the indiscriminate removal of noteworthy trees is going to cause havoc with the community.

Also this section has a curious reference to the desirability of using trees with a "weeping" growth form. We have never seen weeping willows in the Riverway or cannot remember seeing them elsewhere in the Emerald Necklace. The oaks look great.

Lastly page 1 of the ENF contains the following statement:

"The Emerald Necklace Environmental Improvements Master Plan is consistent with the 1990 Emerald Necklace Master Plan prepared for the Department of Environmental Management (DEM) by Walmsley/Pressley and contains the same elements, with the addition of a major dredging component."

The point is, which Walmsley-Pressley is being referred to here. The final edition incorporating all the revisions agreed to by the CAC in Boston (Emerald Necklace Advisory Committee) and the CAC in Brookline, has never been published. The revisions were incorporated into the computer data base, or so I was told by Patrice Kish's office (DEM). The citizen volunteers will be interested in seeing the result of their labors.

Finally we want to say we are enthusiastic about this restoration plan. We will seek to build support for this effort and to resolve any small differences which may arise. Both our organizations have worked for this day for about twenty years. We applaud this plan and will do everything we can to move it forward.

Very truly yours,

Nancy Kafka
Nancy Kafka, President
Boston GreenSpace Alliance

Isabella Callanan
Isabella Callanan, President
Friends of the Muddy River

Robert Durand, Secretary
Executive Office of Environmental Affairs
100 Cambridge Street
Boston, MA 02202

Attention: MEPA Unit

Dear Secretary Durand:

Re: EOEA #11865 - Emerald Necklace Environmental Improvements Master Plan
and Phase I Muddy River Flood Control, Water Quality, and Habitat
Enhancement

Pursuant to regulations implementing M.G.L., Chapter 30, Sections 62-62H, the Boston Redevelopment Authority (BRA) has reviewed the above-referenced Environmental Notification Form (ENF) and submits the following comments.

The proposed project, which involves the historic Olmsted Park system and the Muddy River within the City of Boston and the Town of Brookline, consists of a comprehensive program of rehabilitation of the Emerald Necklace parkland and the restoration of the Muddy River, as an initial phase of a long-range Emerald Necklace Environmental Improvements Master Plan, prepared in 1990 for the Massachusetts Department of Environmental Management. The project proposed in this ENF is consistent with the Master Plan and contains the same elements, with the addition of a major dredging component of the Muddy River system, including several of the ponds located within the parkland. The long-awaited restoration proposals have considerable public and agency support, including that of the Emerald Necklace Conservancy, a non-profit public-private partnership founded in 1996 to work for the improvement and long-term preservation of this important public open space resource, the Friends of the Muddy River, and several others. The BRA likewise wishes to express its full support for the project, especially for the badly-needed flood control proposals and the aesthetic improvements of this significant historic resource.

Approximately 52 separate restoration projects are proposed, including new and rehabilitated bridges, bicycle paths, restoration of historic structures, and various landscape improvements for the Emerald Necklace over the next 15 years or so. Phase 1 of the project involves the Muddy River flood control, water quality, and habitat enhancement project, which is to include bank-to-bank sediment dredging, improvements to drainage culverts and gatehouses, removal of system-wide constrictions, eliminating combined sewer overflows, and the removal of nuisance vegetation. The dredging most likely is to be conducted using a combination of techniques. Following dewatering and treatment, the dredged sediments will be transported to a DEP-approved lined landfill.

RBM/314LTR
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The project proponents - the Boston Parks and Recreation Department and the Brookline Department of Public Works - have requested that both the Master Plan and the Phase I Muddy River improvements be considered for Area-wide Review under the Special Review Procedures of the MEPA regulations (301 CMR 11.09). The proponents propose to prepare both a Master Plan EIR, which would document the area-wide environmental impacts, alternative analyses, and mitigation planning for the total Emerald Necklace restoration project, and a Phase I Muddy River EIR for the Muddy River dredging and associated flood control activities. Due to the nature of the project, and its long-term duration, we concur that this Special Review Procedure would be appropriate.

∴ According to the ENF, it is proposed that the Phase I EIR discuss, inter alia, the following:

- description and evaluation of alternative actions for the proposed Phase I Muddy River improvements
- description and analysis of dredging alternatives
- water quality impacts of the dredging and mitigation measures
- on-site treatment of the dredged material and disposal of contaminated sediments
- impacts on wetlands resources and areas of significant vegetation and mitigation measures
- sediment erosion control plan/best management practices
- temporary impacts to vehicular, pedestrian, and bicycle circulation
- impacts on historic resources of the park system.

We concur that these are appropriate areas for analysis in the EIR. In addition, we recommend that the following topics also be examined in the Phase I Muddy River EIR.

- Phragmites removal - The project proposes the removal of the giant reed, Phragmites australis, through dredging of the river. While we recognize that this is an invasive plant species that thrives on disturbance, and has spread on account of the decrease in salinity concentrations in the Back Bay Fens, it does provide a habitat for several species, as well as assist in the trapping of sediments that otherwise would be deposited into the waterway. The EIR should examine the function of the Phragmites in the Muddy River system, the impact of their removal on wildlife habitat, sediment trapping, etc., and the benefits of new replacement plantings.
- Revegetation - The project proposes the revegetation of the banks of the Muddy River following dredging to provide stabilization. The EIR should describe the types of vegetation recommended for planting and their appropriateness to the historic Fens parkland. The addition of any wetlands plantings also should be described and evaluated.

- Leverett Pond silting - Reportedly, the Chestnut Street drain in Brookline is the cause of a silting problem at Leverett Pond and needs to be corrected. In addition, excessive discharge flow from Tannery Brook also is a problem. The EIR should report on the current conditions and describe the corrective actions to be taken to resolve these problems and prevent future problems.] 3
- Curb settings - Proposed curb settings of the roadways bordering the parkland should be described. Reportedly, at least in some areas, low curb settings have been proposed which would result in sheet flow from the roadways during rainstorms into the parkland and watercourses. This could result in an erosion problem, as well as an increase in the discharge of roadway contaminants. This needs to be examined in the EIR, its impacts evaluated, and best management practices to prevent any adverse impacts described.] 4
- Sears parking lot - The Master Plan proposes to excavate and remove the two culverts in the former Sears parking lot at Park Drive, recently restored to the park system, and to reestablish the original open waterway linking the Muddy River in the Riverway to the Back Bay Fens. We are in full support of this restoration and look forward to its implementation. At the same time, we note that the Sears area also is proposed as a staging area and dewatering site for the dredged sediments, prior to removal of the conduits. However, we do have some concerns that the restoration of the waterway, which would remove the current restrictions of the culverts, may need to take place early in the restoration, along with the proposed Charlesgate area improvements, in order to prevent potential flooding should a major storm occur. The EIR should address this issue and also should evaluate alternative staging/dewatering areas.] 5
- Post-construction monitoring/maintenance - The EIR also should describe the post-construction monitoring and maintenance program to maintain the water quality and flow enhancement of the proposed Muddy River improvements, including best management practices, maintenance of preferred vegetation, removal of evasive species, periodic mowing, etc.] 6

While we have concentrated our comments on the Phase I EIR, we would expect that the Master Plan EIR would take a more universal look at the environmental impacts of the total Emerald Necklace Improvements project and would provide the general context in which the Muddy River dredging could be evaluated. Many of the issues, however, would be similar, since obviously the dredging is the major element of the Master Plan. The Master Plan EIR should discuss, inter alia, comprehensively and in detail the background and history of the development of the Master Plan and the various alternative approaches that have been considered over the years, the positive and negative aspects of these alternatives, and the reasons for their acceptance or rejection. The EIR should discuss the public involvement in the development of the Plan and the program for continued public participation and outreach during implementation of the Plan, including the formation of a Citizens Advisory Committee. Similarly, the involvement of State and Federal agencies over the years, including the] 7

] 8

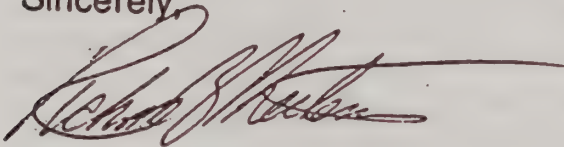
] 9

] 10

Corps of Engineers, the U.S. Environmental Protection Agency, the Massachusetts Department of Environmental Management, and others, should be discussed, and their several studies for environmental improvements and flood control should be evaluated. Sources of funding should be identified.

Section 4.2.4 of the Master Plan, included as Attachment 4 of the ENF, lists those environmental components proposed to be examined in the Master Plan EIR. The analyses are to include existing conditions, project-related impacts, and mitigation measures, with appropriate documentation. We concur that these are appropriate issues for the EIR and recommend that they be included in your scoping determination. In addition, this EIR also should examine the impact of combined sewer overflow discharges and other drainage discharges – legal and illegal – that have affected the Muddy River system and their mitigation or elimination. Lastly, as with the Phase I EIR, the Master Plan EIR should discuss the long-term monitoring and maintenance program to ensure the maintenance of the improvements and enhanced environmental quality of the Emerald Necklace park system.

Sincerely,



Richard B. Mertens, AICP
Environmental Review Officer

cc: Justine Liff, Commissioner
Boston Parks and Recreation Department

Boston Water and
Sewer Commission

425 Summer Street
Boston, MA 02210-1700
617-330-9400

Filed
4-22-99
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APR 26
MEPA



April 22, 1999

Mr. Bob Durand, Secretary
Executive Office of Environmental Affairs
Attn: MEPA Office
Laura Rome, EOEPA No. 11865
100 Cambridge Street - 20th Floor
Boston, MA 02202

Re: Emerald Necklace Environmental Improvements Master Plan: Phase I
Muddy River Improvements ENF

Dear Secretary Durand:

The Boston Water and Sewer Commission has reviewed the Environmental Notification Form (ENF) for the Emerald Necklace Environmental Improvements Master Plan: Phase I Muddy River Flood Control, Water Quality and Habitat Enhancement improvements. The Master Plan outlines the actions that will be needed to restore the entire Emerald Necklace parklands. The Phase I improvements, which are the first phase of the Master Plan, focus on measures required to control floods, improve water quality and enhance the aquatic habitat in the Muddy River.

The Commission strongly supports the initiative taken by the proponents, the Boston Parks and Recreation Department and the Brookline Public Works Department to rehabilitate the Emerald Necklace parklands.

The Emerald Necklace system is a series of parklands and parkways extending from Charlesgate to Franklin Park linked together by resource areas. The Muddy River is among the most significant of these resource areas. The Master Plan includes about 52 projects throughout the Emerald Necklace.

These Muddy River improvements are expected to be made over a 15-year period during three phases. The first phase includes improvements for flood

control, water quality and aquatic habitat. Phase II includes landscaping, building and bridge restoration and traffic circulation improvements. Building/bridge restoration and traffic improvements will continue into Phase III of the Master Plan. The proponent requests comments on the Master Plan and the proposed Phase I projects at the same time so that flood control and water quality projects can begin as soon as possible.

The Phase I improvements propose bank-to-bank dredging from an upstream location at Ward's Pond to a downstream location in the Back Bay Fens. The proponents estimate that bank-to-bank dredging will require the removal of about 171,900 cubic yards of materials from the river. Most of this material will be removed from the Back Bay Fens. In addition to dredging, the proponent proposes to replace the existing culverts in the Back Bay Fens with larger open channels (referred to as "daylighting") and remove obstructions from the river under the bridges in the Charlesgate area. The estimated cost for the dredging plus the other improvements is \$ 43.2 million.

There is precedence for dredging in this area. The Back Bay Fens and the ponds along the Muddy River have been dredged before. Materials have been removed from Leverett Pond, Willow Pond, Ward's Pond and the Back Bay Fens. The accumulation of sediments in these areas seems to be a recurring problem. It does not appear that the proposed dredging will be a final solution because of the Charles River Dam's influence on the Muddy River. The dam slows down river flow so that materials settle out and accumulate on the bottom.

The Commission requests that the following issues be addressed in the Draft Environmental Impact Report for the Phase I Muddy River Flood Control, Water Quality, and Habitat Enhancement.

1. The Executive Office of Environmental Affairs' (EOEA) in a report entitled *Proposed Phase I Flow Improvements in the Muddy River*, dated October 1998, indicates that it is possible to achieve flood control in the Muddy River by channel dredging alone. However, the proponent's bank-to-bank dredging will achieve water quality benefits that will not be achieved by channel dredging. The proponent should compare bank-to-bank dredging with channel dredging with respect to water quality benefits, costs and the amounts of materials to be removed. The proponents should also identify their assumptions about the quality of the dredged materials and where these materials will be disposed of.

2. In addition to dredging, the proponents propose to replace existing culverts and remove obstructions under the bridges along the lower portion of the river. These improvements which are essential for controlling the Muddy River watershed, should be discussed in more detail.] 3

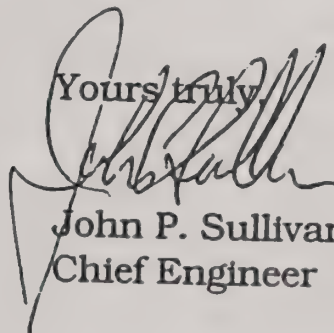
3. The Bussey Brook CSO (referred to in Appendix 4, page 2-17) is not a combined sewer overflow, but an overflow from a sanitary sewer belonging to the Massachusetts Water Resources Authority (MWRA). Additional information about this structure should be obtained from the MWRA.] 4

The hydraulic improvements and flood controls proposed in this ENF should be implemented as the first phase of the Master Plan. These improvements are prerequisites for water quality improvements in the Muddy River and the restoration of the Emerald Necklace.

The Commission has been investigating ways to improve its Stony Brook sewer system, for several years. A number of projects have been undertaken that will compliment the Muddy River water quality improvements proposed in the ENF.

During large storms, the Commission's Stony Brook Conduit discharges into the Muddy River at the Boston Gatehouses. During the next several years, the water quality of these discharges will be improved. This year, the Commission will begin cleaning the Stony Brook Conduit. Over the past 18 months, the Commission has been developing a separation project for the areas along the Stony Brook Conduit with combined sewers. Separation is currently in design and scheduled to be completed by 2006.

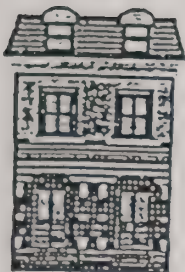
Thank you for the opportunity to comment on this project.

Yours truly,

John P. Sullivan, Jr., P.E.
Chief Engineer

JPS/pk

c

Justin Liff - Boston Parks & Recreation Department
Thomas DeMaio - Brookline Public Works Department
Jack Malone - Emerald Necklace Conservancy
Richard Mertens - BRA
M. Zlody - Boston Environment Dept.



BROOKLINE VILLAGE ACTION GROUPS

P.O. BOX 723

Brookline Village, MA 02147

(617) 232 - 0487

FAX 277 - 7162



Mr. Mark Smith, Dir. Water Policy
Executive Office of Environmental Affairs
Department of Environmental Protection
100 Cambridge Street
Boston MA. 02202

January 1999

RECEIVED

FEB 16 1999

MEPA

Re: BVAG Comments on...
Proposed Phase 1
Flow Improvements in the
Muddy River...
Submitted to EOE by
C D M Engineering Inc.
Camp Dresser McKee 10/98

Dear Mr Smith,

Thank you for providing a copy of the subject Draft Report for our review and comment.

The Proposal as submitted appears to be sound at first reading, but on further study certain deficiencies become apparent.

The anticipated result discussed in Section 4 Page 10, namely

- A) Lowering the water surface elevation during flooding upstream of the Riverway(and Brookline Ave.) without increasing flooding downstream in the Back Bay Fens... thus,
- B) allowing tributaries to flow more easily into the main stem stream during storm events...

are both important and complex goals.

It is unclear how Phase 1 improvements as proposed will eliminate severe flooding when Gate 1 and 2 of the Stony Brook outfall is proposed to be 'open' to allow flows into the Back Bay Fens basin waters. Stony B. is a combined storm drain/ sewer.

This plan can only result in more water volume to the Fens watercourse, at an accelerated rate in any storm event and the polluted Stony Brook flow from the CSO will include raw human sewage and other toxic contaminates.

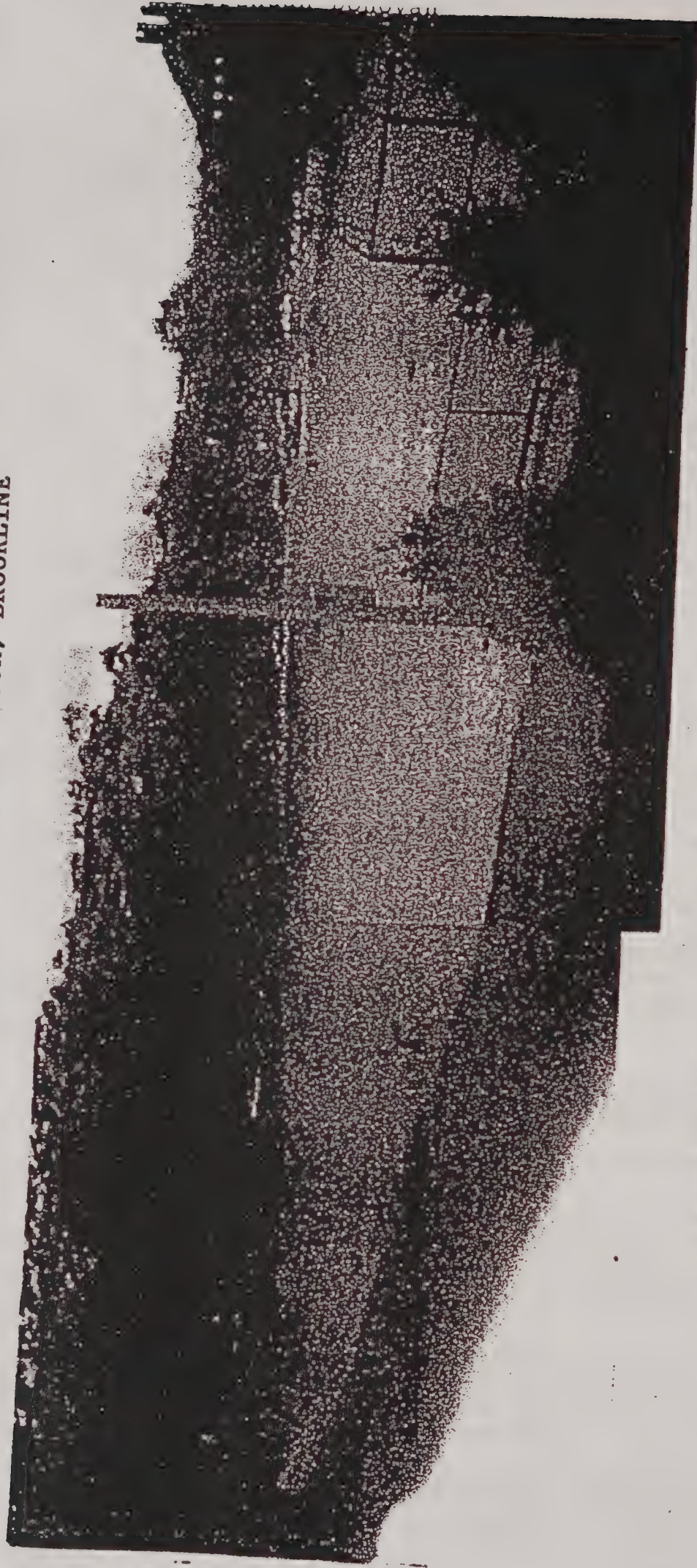
While the 'open gate' plan may relieve flooding at Northeastern and Wentworth the added flow and increased surface level in Fens

-continued on pg 2 ...

STORM EVENT JUNE 13, 1998

RAINFALL 5.69"

SOURCE OF FLOODING -- TANNERY BROOK, BROOKLINE



VIEW OF ASPINWALL AVENUE PARK JCT BROOKLINE AVENUE

During the rain storm on June 13, 1998, waters from a conduit beneath Aspinwall Park, unable to discharge into the Muddy River, surcharged from a vault under the turf, rose to a level of the MBTA right of way, and flowed down rail gradient toward Kenmore Station in Boston.

PROBABLE CAUSE : STREET SAND



Basin and will cause new flood problems in the adjacent environ-

Dredging new channels may increase the Fens Basin holding capacity, but the water level in the Basin will adjust to the same water surface elevation as that in the Charles River.

Dredging the Basin will not prevent flooding in the Fens lower reaches.

To open the Boston Gates 1 and 2 and allow contaminated waters to enter the Fens Basin from the Stony Brook, would be a step backward in time and a major mistake. Olmsted faced the same problem 100 years ago. The answer, beyond tidal flushing, was to divert the Stony Brook sewer and storm flow to the Charles R. and the treatment facility (closing the gates 1 and 2 at the outfall near Northeastern and the Art Museum).

Presently, in periods of high flow, the foul flow overtops the gates 1 and 2, delivering the flow to the Fens System, but at the same time, when the foul flow conduits to Charlesgate East are full and cannot discharge to the Charles or continue flowing through the East Gatehouse into the transmission conduit to the treatment facility, a backup through the sewer lines occurs causing flood flow to Northeastern, Museum of Fine Art, Wentworth and flooding further upstream beyond Ruggles Street, along the Stony Brook Conduit to the Archdale Area and beyond. See Figure 1 showing Foul Flow Conduits, Old Stony Brook to Gate 2, and the Stony Brook Conduit with Commissioners Channels to Gate 1.

Focused study and modification of the CSO outfall to the Charles River # 023, may be a more direct solution to the flooding along the Stony Brook System and at the same time avoid contaminating and flooding the Back Bay Fens open waters in the lower reaches.

In the Introduction Section 1, Page 1 the Proposal refers to the entire watercourse as the Muddy River ... This is a misnomer. The portion of waterway downstream from the Brookline Gatehouse at Park Drive and Brookline Avenue is historically known as the Back Bay Fens and was never a part of the Muddy River on Maps or in common descriptive designation.

Lowering the water surface elevation in the upstream main stem is not an important factor unless overbank flooding is eminent.

In the October 21, 1996 and June 13, 1998 rain storm events, a minor street flood occurred on the Park Drive/ Riverway connector at the intake end of the twin conduits to the BWSC Diver-sion Gate at Brookline Ave. jct Park Drive. This paved street is in the normal flood plain and provides surge relief in flood events, and helps to maintain the integrity of the left bank dike (an earth berm and cement wall flood control structure built along the MBTA Greenline right-of-way) which prevents river waters from inundating the transit tracks in such events.

In these storms the hydraulic capacity of the River, contrary to popular belief, was not exceeded. Some tributaries, plugged with street sand surcharged. Some mainline sewers received storm water and overflowed and backed up. The Tannery Brook flooded the MBTA Greenline and Kenmore underground station resulting with damage and losses of over 50 million dollars.



Photo Brendan Donovan

SAND BAG EMERGENCY DAM - View from Park Drive bridge.

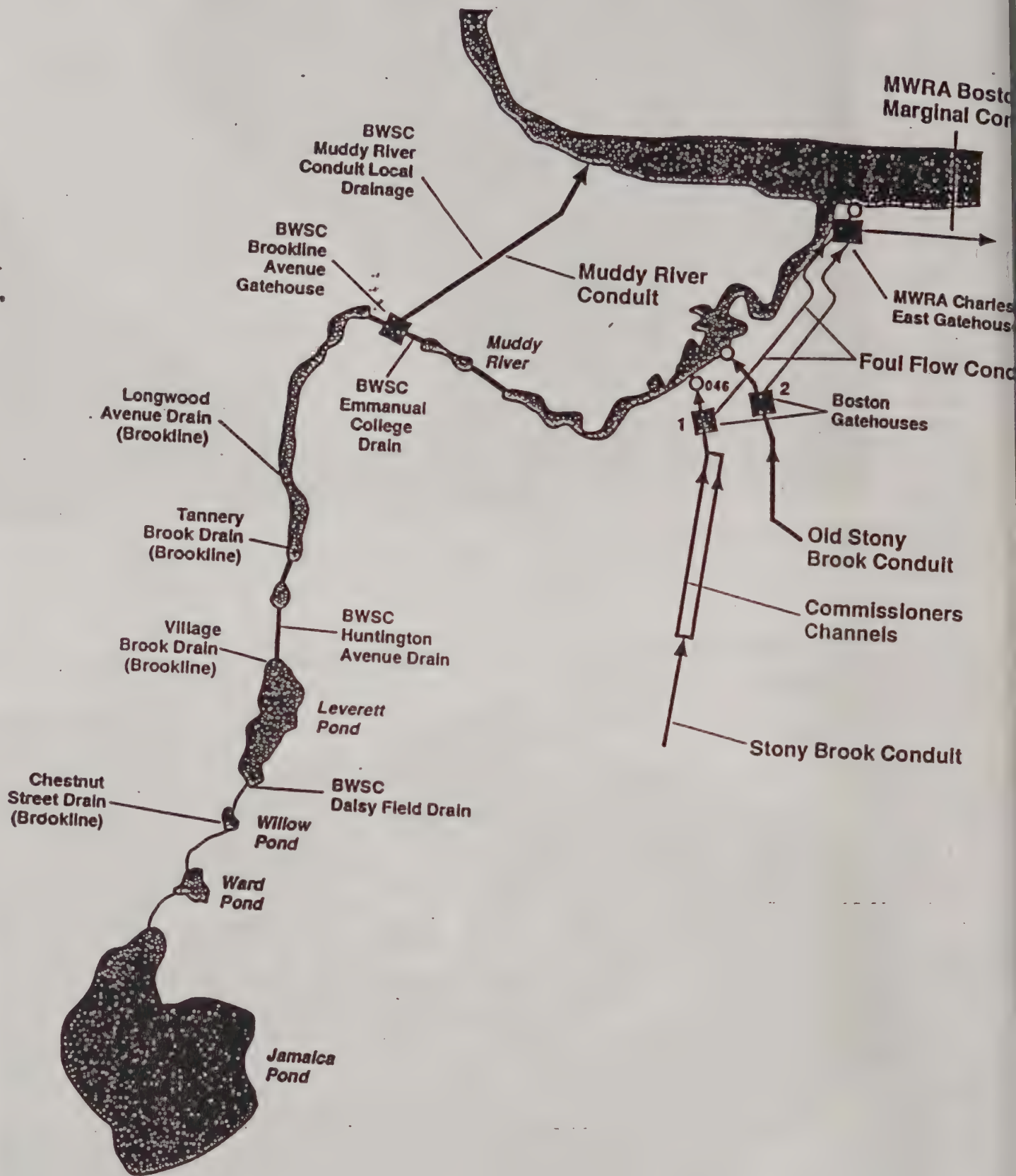
MBTA FENWAY STOP -

TANNERY BROOK FLOOD WATER 6-13-98



Photo Brendan Donovan

SAND BAG DAM AND PUMPS View of emergency activity -
at tunnel opening to Kenmore Station (under).



Massachusetts Executive Office of Environmental

In the introduction Section 1 Page 1, the CDM Proposal states, in p3 " The Tannery Brook...(normally) discharges into Muddy R. at a point downstream of Leverett Pond. However, during periods of high flow, the (high) stage in the river prevents the Tannery Brook from discharging and it (the Tannery B) floods the Brookline Avenue Playground and the MBTA Greenline tracks".

While it is accurate that the Tannery B is in a conduit designed to discharge flow from a drainage basin of 410.0 acres, studies have shown no flow from this tributary, even when the river is low. Our observations record Tannery B waters surcharging from vault A after minor rains as well as during flood events.] 11

The conduit across Aspinwall Playground at one point is an inverse siphon allowing the main Brookline Sewer Transmission Line to pass above, it then continues toward the River beneath Brookline Ave. and the flood control dike to the outfall structure at riverbank.

Has the Tannery flow been blocked with street sand build up?...] 12

Studies leave observers curious...Why would the Tannery conduit at Vault A and a nearby sewer opening surcharge at the same time during storm events, unless of course they were hydraulically connected. In the latest flood of the MBTA tracks June 13, 1998, not only waters from Tannery B , but sewage from Brookline Sewer's series of access openings (5) paralleling the tracks surcharged to join the flood flow toward Kenmore Station.] 13

Fortunately the MBTA crews had time to assemble a wood wall and sand bag dam at the mouth of the tunnel at Park Drive averting a second flooding of the underground station at Kenmore Square.

Millions of gallons of sewer water was hastily pumped into the Muddy River at the twin conduits just upstream of the BWSC Diversion Gate at Brookline Ave. jct Park Drive.

The Muddy River waters per se, were not involved in the flood of the MBTA 10/21/96 or the second flood 6/13/98, 18 months later.] 14

It appears Camp Dresser and McKee has not considered this data in this subject proposal.

The studies by the US Army Corps of Engineers did not address the impact of tributaries flooding local environs prior to flows entering the main stem of the waterway, and did not recommend the ' opening' of Gates 1 and 2 of the Stony B CSO in the Fens Basin.

The Boston Water and Sewer Commission report on the 10/21/96 flood focused on the Stony B conduit and the Brookline Avenue conduit and flooding in areas appurtenant thereto.

The report by the Brookline Village Action Groups dtd December 96 on the 10/21/96 storm and flooding detailed the event, photographed the source and suggested a detailed plan for flood prevention and predicted the subsequent floods, without immediate corrective action. Copies were furnished to all agencies and interested parties.
(Flood Report - Storm 10/20-21/ 96 Brookline Library, Brookline Room 352.7 B79vr. BVAG)

Photo Brendan Donovan



ASPINWALL PARK Flooding from Vault A, after minor rain
View toward MBTA rail bed from midfield

TANNERY BROOK - VAULT A UNCOVERED - ACCESS TO CONDUIT

Photo Brendan Donovan



ASPINWALL PARK During renovation and resodding project
View toward Pearl St. from midfield

Referring to Section 1 Page 1 Introduction...

The "Red" Plan, designed to reduce acute flood problems speaks to flooding occurring in the tributaries, namely the Tannery B and the Stony B, but offers no plan to control flow in the main stem. The Stony B in Boston has a drainage area three times that of the Muddy R. With both systems 'wide open' more water volume will flow to the Back Bay Fens Basin, more rapidly. Overland flooding will definitely result in adjacent environs.

It would seem the first priority would be to 'fix' the uncontrolled flows in the contributing tributaries rather than rush to squander millions of tax dollars on flawed make work plans to alter the main stem of the waterway to no avail.

The first two paragraphs describing the Muddy R are inaccurate and plainly wrong. The lower portion of the waterway is not the Muddy River ... It is the Back Bay Fens. the Muddy R. is not connected to the Stony Brook as described.

No study data is included to support the claim that the waters of Tannery Brook are prevented from entering the Muddy R. due to the high level of the water surface in the river.

The statements made in paragraph 4 are not accurate, erroneous and misleading. The Muddy River has not Flooded periodically in the past as averred. The claim that the River exceeded the hydraulic capacity is false.

The flood studies by the BWSC focused mainly on the Stony Brook.

The Army Corp reviewed the floods 1996 and 1998, offered no plan to remediate flooding in the tributaries and made minor recommendations including removing the culverts to the BWSC Diversion Gate at Brookline Ave. jct Park Drive...which would, the Corp Report states, increase flood levels in the Back Bay Fens to Charlesgate. The Reconnaissance Study and Final Report were rejected, inadequate to obtain FEMA or other Federal funding.

Other studies concerning the tributaries, Muddy R main stem and the Back Bay Fens were not cited and obviously have not been used in establishing the basis for this CDM Proposal.

Before embarking on details review in Phase 2 and 3, a more specific description of the entire watershed system, drainage basins, holding ponds and reservoirs, with measured flow/surge rates and volumes ought to be part of the basic data for this kind of Proposal.. Phase 1, which concentrates specifically on the storm water first flush delivery by the tributaries to the main stem waterway.

Figure 1 titled Schematic of the Muddy River could be more accurate by adding Seargent Pond and brook flow to Jamaica Pond as well as Daisy Spring flow to Willow Pond. The Village Brook Relief Conduit which enters the main stem at Pearl St. Brookline. A more detailed description of the waterway follows.

Although the Muddy River receives some small flow from Jamaica Pond, the headwaters are at Goddard Ave. and Newton St. Brookline, forming the South Meadow Brook and downstream the brook receives overflow from the Brookline Reservoir at Rt 9 and Warren St.

Hammond Pond and the Chestnut Hill Reservoir in Newton collect and deliver storm water flow to the Village Brook combining at Beacon Street, Cleveland Circle, then flowing (covered) along the MBTA right of way toward Cypress St in Brookline.

The Village Brook and South Meadow Brook meet and combine the volume at Brington Road and flow downstream to Leverett Pond as the "Village Brook", draining about 2340 acres or 3.65 square miles and is the main tributary to the Muddy River.

Other smaller basins drain to the river system via Chestnut Brook (164 acres) or 0.26 sq.mi. and Longwood Brook (331 acres) or 0.52 sq.mi. in Brookline and the Daisy Field Brook and the Huntington Ave. Drain in Boston.

Sargent's Pond, Jamaica Pond, Ward's, Willow and Leverett Ponds, are all hydraulically connected and with the Village Brook flow result in combined volume to the main stem at River Road, Brookline Village, just upstream from the Tannery Brook outfall at Aspinwall Ave jct Brookline Ave. The river receives minor local flow from the Village Brook Relief Conduit (from Pearl Street) at River Road as well.

The Tannery Brook originates in Brighton (Boston) having basin drainage of 410 acres or 0.64 sq.mi. The covered brook follows a course paralleling Washington St to School St., Brook St and under the MBTA Greenline tracks at Aspinwall Park, then under Brookline Avenue to the outfall at Muddy R.

These combined flows travel downstream as an open waterway to Riverway Crossing at Brookline Avenue Boston and are known as the Muddy River. The river flow is split at this location by controls at the Brookline Gate House. One third of the flow is diverted to the Brookline Avenue Conduit delivering to the Charles River CSO. The remainder of the Muddy River flow enters the Back Bay Fens System at the Brookline Avenue Gate House and combines with waters from the Emmanuel Drain Conduit discharging into Fens Pond. Including local watershed the total area contributing to the Muddy River above Park Drive is 4,550 acres or 7.11 sq.mi. up stream of the BA Gate House.

The water course, with parts in closed conduits, from Fens Pond at Emmanuel College to the discharge under Storrow Drive into the Charles R is known as the "Back Bay Fens System", about 1.7 miles with tributaries delivering additional flow.

The Emmanuel Conduit drains a basin of 410 acres or 0.62 sq.mi. Local watershed drainage area is 560 acres or 0.87 sq.mi.

Photo Brendan Donovan



MURPHY PARK TOT LOT - View from 99 Kent Street

TANNERY BROOK FLOOD - 6-13-98

Photo Brendan Donovan



MURPHY PARK TOT LOT - View from Bowker Street entrance -
Brook Street in background, Kent Street on right.

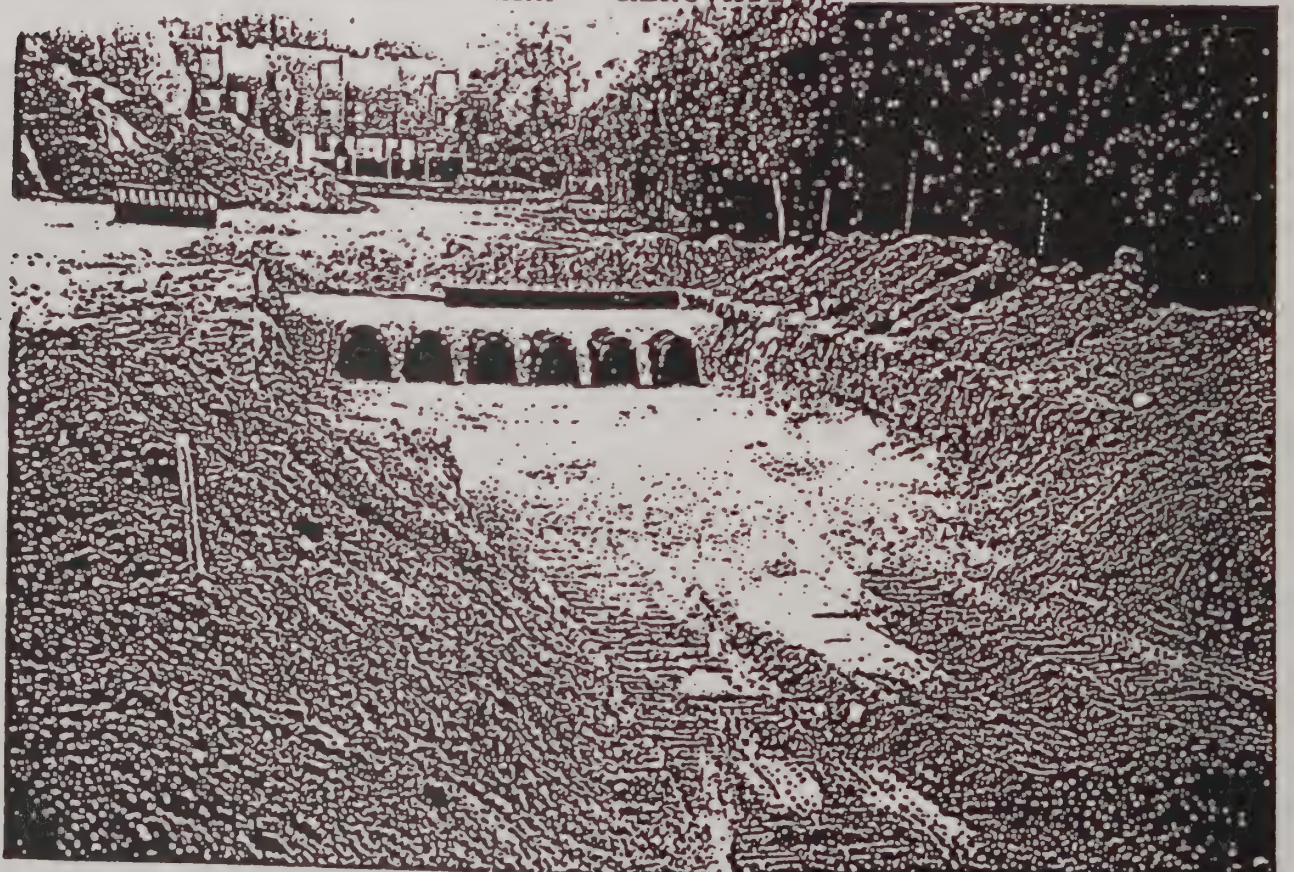
Photo Brendan Donovan



NEW GRATE - Receptor replacing old sewer cover on manhole
to dedicated sanitary sewer conduit delivering
sewage to treatment plant
Housing on Pearl Street, background

DRAINAGE - ASPINWALL PARK - RENOVATION

Photo Brendan Donovan



UNDERGROUND STRUCTURE AND LEACHING PIT - DEP # 120 - 62
Designed and installed to provide drainage for entire field

In Section 2 the proposal discusses the Current Flooding Situation (pg 5).

In the September 1996 storm the Tannery Brook flooded both Aspinwall Playground and Murphy Park (on Brook St.) and the MBTA Greenline at track side, the low surface level in the Muddy River notwithstanding.

In October 1996 a second storm flooded as above, only in this event the surcharge flow and water volume, when reaching the MBTA tracks, continued down the track grade to inundate the underground station at Kenmore.

In June 1998, a third storm flooded as above, but this time while flowing down the track grade the flooding was increased by the surcharging of Brookline's main sewer line, adding foul flow to the flood waters which inundated the Fenway Station on the MBTA Greenline. With sand bags and pumps the MBTA crews diverted the floodwaters from the underground transit system, averting a repeat of the 1996 catastrophe.

On December 2-3 1996 a minor storm caused flooding at the same location in Aspinwall Playground, but did not reach the MBTA. The river was low and no flow was observed at the Tannery Brook outfall.

It should be noted the Town made major renovations to Aspinwall playground between 10/96 and 6/98, including deep drainage and leaching systems installations, precisely at the flood source location, all with DEP permits. (Mass DEP # 120-62),.

Unlike the Stony Brook (a combined system), the Brookline Sewer Main Transmission Line is a separate dedicated conduit (foul flow only) and should not receive any storm water runoff or storm drain overflows at any time. Diversion of storm flows from the Tannery conduit and the Longwood conduit, to the main line sewer would exceed the designed capacity and defeat the purpose of the separate sanitary system, and further, would cause the surcharge and flooding experienced in the aforementioned storm events.

In Sec. 2 Para. 2, the CDM outline of current flood conditions relies on incomplete information offered by the Town officials and CDM's modeling. No on site engineering studies were conducted or published. Base data necessary to support the thesis is not included. The Army Corp. measurement of high water in the main stem were approximated three weeks after the 10/21/96 storm event.

It took 18 months and a second event to convince the agencies the Tannery Brook flooded the MBTA transit line... not the Muddy River. Likewise the flooding in Boston was attributed to the Stony Brook... not the Muddy River. The combined sewer system called the Brookline Avenue Conduit back flowed from the Charles causing floods in the immediate Back Bay local.

ADDITIONAL FLOOD SOURCE - AFTER 6-13-98 STORM EVENT

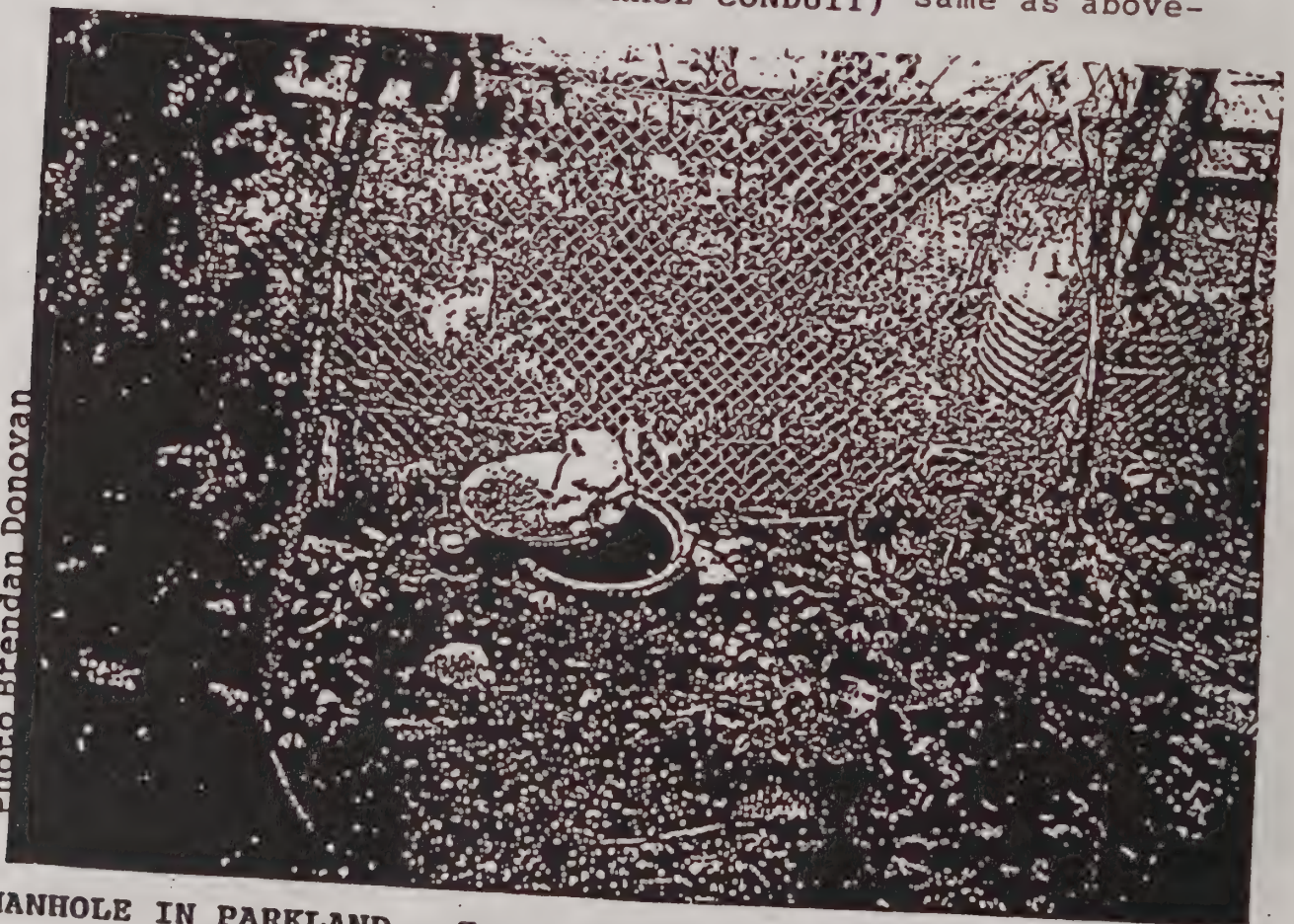
Photo Brendan Donovan



FRANCIS STREET DRAIN - Cover displaced by sewer surcharge flood flow to MBTA tracks and down grade to Fanway T stop.

FRANCIS STREET SYPHON (SEWERAGE CONDUIT) same as above-

Photo Brendan Donovan



MANHOLE IN PARKLAND - Transmission line from Boston, delivers raw sewage and medical waste, under river, to Brookline main.

In 1992 the Army Corps Engineers, after major storms were analyzed (August 1955, October 1962 and March 1968), identified problems with the Brookline Avenue Conduit, being flat gradient at sea level with delivery of storm water flow dependent on the surface level of the Charles River Basin, would have difficulty draining the watershed in major storm events. The Corps concluded " the costs of improvements would exceed...any flood control benefits, and Federal funding would not be justified."

Boston rebuilt the conduit in 1991 and BWSC installed new flood control gating at Park Drive. The gates are open at all times, but flow may be increased in times of heavy storm runoff much like further opening an overhead garage door. This allows the Muddy River to discharge to both the Back Bay Fens and the BAC courses to the Charles R. and protects the integrity of the left bank dike above Park Drive adjacent to the MBTA tracks.

CDM states "Modeling indicates that the conduit was severely surcharged during the October 1996 storm, which was the likely cause of street flooding in this area." No data is included in the report indicating the surface level of the Fens Pond or the Charles River Basin during this storm event.

The report states, on page 5, the Stony Brook Conduit "could not discharge into (the Fens System) the...river, until it overtopped the gates"...in CSO # 46 at Gate 1 and 2 thus causing flooding at Northeastern and Wentworth. No detail is offered explaining why the SBC and OSBC could not discharge through CSO #23 on the banks of the Charles R. as designed.

Boston Water and Sewer along with MWRA state; in their combined report, December 2, 1996 to Mayor Menino, "BWSC's #46 combined sewer overflows (CSOs) activated during the storm." and "There were no ...operational failures on any BWSC wastewater facility during this storm event (10/20-21/96):"

CDM assumes water surface elevation in the conduit caused the backup and flooding, but it could have been blockage by debris and sand sediments or the high surface levels in Fens Basin or high water surface elevation in the Charles River Basin at CSO #23 that caused the backup(or all of the above.)

Each winter thousands of tons of sand and rock salt are spread on sidewalks streets, parking lots and roadways in the drainage basin. Storm water carries large quantities into curbside catch basins drains and flows with each rainstorm into tributary conduits leading to the river. Over time the sand sediments clog the conduit, diminish the capacity and impede the flow and can cause blockage and backup within the conduit. With the pressure of a flood flow sediments are scrubbed from the conduit and discharged to the river as in the case of Stony Brook and Old Stony Brook, Emmanuel Drain. Village Brook and Chestnut Brook. Sediment buildup is easily recognized at each outfall as an island, rising above the surface level of the water.

CDM proposes removal of these sediment islands by dredging but offers no plan to control entry of sediments to non-point source receptors.

Photo Brendan Donovan



WILLOW POND View NE, Stream banks bordering waterpark

SEDIMENT DEPOSITS - STREET SAND - MUDDY RIVER

Photo Brendan donovan



WILLOW POND View at Chestnut Brook outflow under falls

In Section 3 the CDM proposal discusses details of intended goals of suggested improvements (pg 6).

It has never been shown in prior studies that increasing rates of flow is a benefit in wet weather. In fact flow is only important in the 10 weeks of summer when parts of the main stem dry up or the flow is so sluggish stagnation results and the fishway becomes blocked and oxygen is not replaced.

No previous studies have shown that upstream flooding, if any, is remotely connected or the result of flow constrictions in culverts from the Riverway to Upper Fens Pond. No data is provided in this CDM proposal to support the assumed benefits of culvert removal (day-lighting the twin conduits at Park Drive).

Opening the CSO's at Gate House #1 will flood the basin with sewage and storm water beyond the basin capacity whether or not existing channels in the basin are enlarged, as basin high water levels are dependent on water levels in the Charles River which will have high surface levels also, in the same storm event.

In Fig.2 (pg 6) proposed improvements are as follows;

- * Remove debris (dredge) Willow Pond, in reality speaks to clean up of a 21-E toxic site. No local drainage is currently impeded as described. Willow Pond is designed with flood control structures at the outlet end and serves as a retention basin for heavy rainstorm runoff. The 1600 yards of sediment (street sand) is tainted with petroleum product and other pollutants.
- * Remove debris (dredge) Leverett Pond, proposes removal of the accumulation of street sand, deposited by flood surge from the Village Brook twin conduits, constituting about 4200 yards of material. This 'island' does not impede flow from Village Brook or local drainage.
- * Remove debris from 5 sections of the channel within the river way. This plan concerns removal of vegetation (Phragmites) and root systems which thrive on heavy nitrogen loads in areas where drains also deliver raw human sewage. Dredging would remove 1300 Yds, contaminated material.
- * Replace a series of culverts (conduits), to 'daylight' the now green space and usable parkland. This 'need' is unsupported and may well add to flooding in the Back Bay System as discussed previously in this comment.
- * Clear debris (dredge) a new channel from Gate House #1 downstream to Ipswich Street, Removing 17,000 cubic yards of contaminated material. Channel bottom to be 101.6 MDC datum.
- * Dredge to clear channel between Ipswich St. and the Charles R. Remove about 5000 cubic yards of material and obstructions recently discovered... to a bottom depth of 101.0 MDC datum. This channel is beneath 7 roadways.

In Section 4 (pg 10) the proposal discusses anticipated results comparing the maximum elevation upstream of Park Drive and the Riverway 118.6 during the October 1996 storm event, to expected surface levels in a similar event after proposed improvements, or 113.8... This projection is based on 2 measurements as shown in Figure 4 and appears as a result of reading high water marks rather than actual surface level readings taken during the storm duration.

Assuming the 118.6 is accurate and the Tannery conduit top is at 111.9, it is difficult to believe the 6.7 foot elevation to flood surge level in the main stem would develop a hydraulic pressure sufficient to prevent entry of the Tannery Brook flow.

It appears the Village Brook twin conduits, in the same storm and same specifics, had no problem discharging to the main stem open water, while carrying tons of sand as precipitate.

Our studies on site during the 10/21/96 event and prior show no flow at the Longwood Brook and the Tannery Brook drains. The same no flow condition was apparent during the 6/13/98 flooding.

The Old Tannery CSO 'seal' gate was open from the river to manhole in Aspinwall Park, and surcharged in both events, delivering floodwater overland and directly to the Brookline Sewer Transmission Main. (not shown in CDM Fig 4 pg 11).

The Village Brook Flood Relief Conduit at Pearl St/ River Road is not shown in CDM Fig. 4 (pg 11), an integral part of the flood control system apparently presently closed and abandoned.

It appears the Curley Bridge, Brookline Ave. Bridge, Netherlands Road Bridge, and Longwood Bridge did not restrict the main stem flow. The remaining 6 high watermark measurements in Fig. 4 seem to indicate constrictions at the Brookline Avenue Gate House, the Fens Pond and Ipswich Street. No measurement is shown for maximum high water in the Charles River during the 10/21/96 event.

No data is offered to indicate the flows to the main stem from the Emanuel Drain or the Stony Brook and Old Stony Brook CSOs, or other tributaries carrying local runoff to the lower reaches of the Fens Back Bay System. Obviously such flows contributed to the volume and the measured high water marks shown in Figure 4, and would continue to contribute whether or not up stream conduits were 'daylighted'.

We believe, if the retention capacity in the upstream reaches of the main stem is defeated by the open channel- no conduit plan, flood waters will rush to the Fens Basin unimpeded and coupled with new additional flows from Stony Brook, will rise well above the 112.0 surface level at Ipswich St. (Charlesgate) measured in the October 21, 1996 flood as shown in Fig 4 (pg 11) in the Camp Dresser and McKee Proposal Phase 1 Flow Improvements.

The CDM Proposal fails to consider the conditions in the river during the 10 week dry season in the summer months. With the channels wide open, having no retention ponding in the main stem, the flow would be a mere trickle and dry up totally in many areas flowing only intermittently when it rains.

35

No flow augmentation plan is offered, to prevent stagnation and pathogenic conditions fostering harmful bacteria and virus. Data is missing regarding impact on fish and wildlife and public health.

36

'Normal' water surface elevations as shown in Fig. 4 appear to be assumed (not supported by actual on site measurements or prior studies). It may be noted the flood event 6/13/98 occurred in the summer dry period when the main stem is at annual low flow attitude.

37

The premise that the tributaries 'cannot' enter the main stem due to high surface levels in the containment is clearly wrong.

38

Maintenance of the river system during dry flow periods was part of a Proposal by BVAG submitted to EOEA December 1998 as previously mentioned on page 3. Within the report Flow Augmentation using several existing reservoirs presently hydraulically connected to the Village Brook flowing into Leverett Pond would be used to flush and refresh the main stem during dry weather. Recently the MWRA /MDC released the Fisher Hill Reservoir as obsolete surplus property. The Rt 9, Brookline Reservoir, Chestnut Hill Reservoir and now Fisher Hill Reservoirs could be utilized for augmentation.

Another item in the BVAG Proposal "Sears Spillway Brook" acts as an escape pathway for flood waters in Muddy River to flow downstream, overland to discharge in Fens Pond, thus negating the need to enlarge or remove conduits in the Sears Lot at Park Drive and the Riverway. (see pages 26-27 BVAG Report and Proposal to EOEA 12/98.)

Referring to Section 5, page 12 in the CDM Proposal... titled Phase 1 Improvements Cost Estimates Table 1. The total cost is shown as \$ 21,512,659 based on a December 1999 construction start.

39

Permits are listed on page 14, but are seemingly incomplete. The entire water course (Muddy River and Back Bay Fens) is a fishway and spawning ground for the North Atlantic Blueback Herring and would require permits from the National Marine Fisheries Service.

40

The project is to be accomplished over a two year period ending November 2001

Comparison costs of alternative proposals are not included in the Camp Dresser and McKee Inc. Report. "Flow Improvements" Dated October 1998.

41

Photo Brendan Donovan



RIVERWAY (ROAD) CROSSOVER - Site of proposed 'sluiceway' to direct high water overland, across parkland to Fens Pond. - View toward MBTA Fenway T stop.

MUDDY RIVER - FLOODPLAIN - STORM EVENT JUNE 13, 1998

Photo Brendan Donovan



RIVERWAY (ROAD) CROSSOVER - Terminus of Muddy River - Inlet to twin conduits beneath Sear's Lot, delivering water under parkland to Fens Pond, on right (unseen beneath water surface level) - Muddy River background -

The CDM Proposal costs of Phase 1 suggested construction and dredging in the Muddy River and Back Bay Fens are estimated at \$ 21,512,659.00. Some minor work is in the Muddy River above Park Drive being at Leverett and Willow Pond and spots in the Riverway, totalling \$ 850,108.00, none of which will prevent or have an impact on flooding. The balance of the proposed project is in Boston only, and totals \$ 20,662,551.00 with only the Ipswich St. to Charles R. blockage being imperative.

The project is based on the concept of lowering the surface level in the Muddy River so the Tannery Brook tributary may flow easily into the river. None of the other 5 main tributaries are or have been blocked by the elevations of flood water in the main stem of the Muddy R. The project design specifies removal of restrictive conduits buried in the Sears Lot and conduit removal in 2 other locations near Fens Pond so the flow is not retained at high levels in the upper reaches of the waterway.

If this were truly the basis and the prime cause of the Tannery Brook flooding and the Brookline Sewer flooding, the easy, rapid and less costly 'fix' would be to install the sluice way or surface culvert suggested by BVAG 12/96. This flood water escape pathway between the Muddy and Fens Pond would maintain the lower surface level desired in the river, all accomplished at minimal expense estimated \$ 300,000.00 and minor disruption to the local environs. Using CDM's proposed method, cost forecast \$ 6,739,088.00

The proposed dredging from Boston Gate 1 and 2 would not provide additional water volume storage as claimed because it will be at Charles R. level prior to any storm unable to accept new flood flow volumes whether from the Muddy R., the Emmanuel Drain or the proposed Gate 1 and 2 outfall from Stony Brook as detailed in Section 3 Pages 6 and 9. CDM's estimated cost, \$ 2,810,783.00

The Ipswich Street to Charles River channel blockage, recently discovered, should be a first priority stand alone repair project and undertaken forthwith as emergency, separated from any other improvement or new construction proposals. CDM's cost estimate is \$ 1,535,089.00

Phase 1, the so called 'Red' plans primary purpose is stated to be "Flood Reduction" but fails to address any problems in the tributaries where flooding took place. Flooding took place along the brooks far from the main stem but no corrective plan is offered in the CDM Proposal with focus on the contributing watersheds delivery conduits. Without considering the non-point pollution and sediment entry to the river system, expenditures of vast sums to clean up the main "drainage ditch" is merely a make work task.

Therefore we feel we feel the CDM Report and Proposal is deficient as presented.

The following is our commentary on 'the effect on flooding' after completion of project increment as listed in CDM's Proposal.

Full dredge Willow Pond- 21-E Toxic ..		none	
Dredge Riverway channel Phragmites...		none	
Remove culverts to Brookline Ave.		increase	
Replace Gate House Sears Lot		increase	
Remove culverts Upper Fens Pond		increase	
Sediment removal in Syphon		reduce	\$ 194,196
Remove culverts Back Bay Fens		increase	
Dredge channel to Ipswich St.		none	
Remove sediment/ blockage under Storow Dr.	reduce		\$ 1,535,089
Dredge to remove island Leverett Pond.....	none		
Open Stony Brook Gates 1 and 2 to Fens	increase		
(*) CDM- Total cost items <u>reducing flood</u>			\$, 1,729,285
CDM- Total cost other items			\$19,783,374

Alternative method: (proposed by BVAG December 1996)

Construct and install escape pathway at surface level in the Sears Lot to discharge high water at Fens Pond, insuring the integrity of the left bank dike. (acts also as receptor for local streets storm water runoff).

Install Sears 'Spillway Brook' across parkland.....	\$	300,000
BVAG - Total cost items <u>reducing flood</u>		300.000
(*) Total cost items reducing flood	\$	1,729,285
Grand Total for <u>flood reduction</u>	\$	2,029,285
<u>Unnecessary, avoidable expense</u>	\$	19,483,374

The 'Spillway' proposal above is a stand alone flood control item, not dependent on any other. It will not disrupt the environs, has minor street work and less traffic impact, will not affect water quality or river flow, or any other environmental improvement proposed. The structure negates day-lighting, has no negative impact on the fishway and construction may be commenced at anytime in any season or weather. The 'Spillway' enhances flood control structures presently existing, as the left bank dike and flood wall system.

Project

Flood Control Improvements
Muddy River
Boston, MA

DURATION:
DURATION:

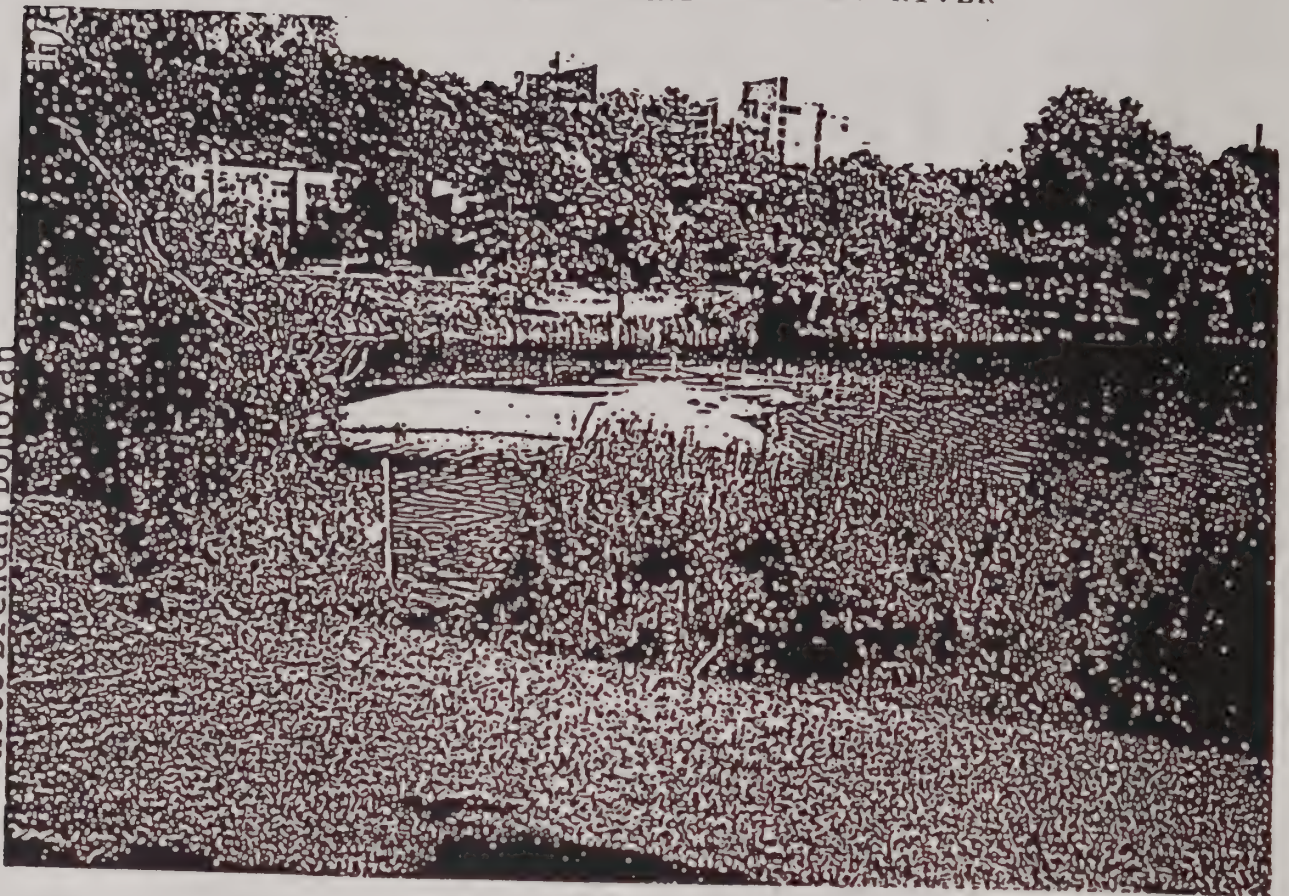
106.0 wks
24 mo

Camp Dresser & McKee, Inc.
10 Cambridge Center
Cambridge, MA 02142

Code		Description	Quantity	Unit	Material Price	Material Total	Labor Price	Labor Total	Equipmt Price	Equipmt Total	Total Price
Project Summary - Culvert Replacement (w/open channels), Dredging, and Sediment Removal											
\$											
GENERAL CONDITIONS											
WILLOW POND DREDGING											
					\$ 1,373,917		\$ 1,418,904		\$ -	\$ 2,792,821	
RIVERWAY CHANNEL DREDGING											
					\$ 224,607		\$ 75,026		\$ 51,213	\$ 350,845	
CULVERT REPLACEMENT - (Riverway - Brookline Ave Gate House)											
					\$ 183,016		\$ 63,498		\$ 42,698	\$ 289,213	
BROOKLINE AVE GATE HOUSE											
					\$ 1,250,799		\$ 1,054,472		\$ 352,949	\$ 2,658,220	
CULVERT REPLACEMENT - (Brookline Ave Gate House - Upper Fens Pond)											
					\$ 202,964		\$ 198,246		\$ 95,665	\$ 497,874	
SIPHON											
					\$ 817,204		\$ 618,289		\$ 211,478	\$ 1,646,971	
CULVERT REPLACEMENT - (Upper Fens Pond - Back Bay Fens)											
					\$ 65,789		\$ 105,684		\$ 77,723	\$ 194,196	
DREDGING - (Boston Gate House # 1 - Ipswich Street)											
					\$ 753,335		\$ 744,373		\$ 244,119	\$ 1,741,827	
SEDIMENT REMOVAL (Ipswich Street - Storrow Drive)											
					\$ 2,038,872		\$ 448,263		\$ 323,649	\$ 2,810,783	
LEVERETT POND DREDGING (estimate supplied by Beta Engineering)											
					\$ 796,806		\$ 492,194		\$ 246,089	\$ 1,535,089	
• SUB TOTAL											
									\$	\$ 210,000	
DESIGN CONTINGENCY											
				20.0%						\$ 14,727,839	
ENGINEERING											
				10.0%						\$ 2,945,568	
SUB TOTAL											
										\$ 1,472,784	
ESCALATION TO MID POINT OF CONSTRUCTION											
				12.36%						\$ 19,146,190	
TOTAL PROJECT COST											
										\$ 2,366,469	
										\$ 21,512,659	

SEDIMENT DEPOSIT - STREET SAND - MUDDY RIVER

Photo Brendan Donovan



LEVERETT POND View at Village Brook outflow conduits

SEDIMENT DEPOSIT - STREET SAND - MUDDY RIVER

Photo Brendan Donovan



WILLOW POND View at Chestnut Brook outflow conduit

The true cause of the high surface levels in the river is the lack of exposed aquifer. The continued urbanization of the environs has, with constant building of new roads, parking lots and buildings, paved over green space and the natural absorptive sponge beneath, leaving an impervious membrane to block storm water saturation and retention.

No alternate system has been adopted to retain storm water and control runoff from the drainage basin to the river.] 46

During a rainstorm the down pour rushes to the piped and conduit drains and is swiftly delivered in great volume to the main stem of the river system. The river surface rises within minutes, responding to the deluge. The surge is barely contained in the Muddy R. main stem due to the flat regime at near sea level.

To further exacerbate the condition, tons of street sand accumulate in the drain conduits causing diminished capacity and slow flow, causing backup, surcharge and overflow in the tributaries. Ultimately these sediments, over time, appear in the stream at the discharge end of the drain conduits as islands of sand.

Some of the drains become plugged and surcharge into the dedicated sewer system via cross connections. Some flow overland flooding adjacent environs, causing great damage and loss. Street sand is the culprit for the most part although construction clay and grit add to the dilemma. This condition is the direct result of poor management practice and failure to clean catchments.

The Muddy River and tributaries have many retention ponds/ reservoirs which are in line and hydraulically connected, but unused. The system is without formal management and control.

Many studies have been undertaken at the request of various agencies, but none to date offer a "River Management Plan" for the Muddy River watershed, the Back Bay Fens, or Stony Brook systems.] 47

Properly utilized the 'retention ponds' would not release storm water flows during heavy rain events and would augment flows in dry weather periods, thus preventing extreme high and low surface levels in the main stem as presently structured.

We feel the flooding dilemma will continue without resolution until river and watershed management is taken seriously by the first line operative directors involved.

The present and past focus seems to be on funding...not fixing.

Funding requests to FEMA in 406 and 404 applications previously submitted for proposals similar to this CDM proposal, were rejected... Federal funding from HUD for the CDM project proposed in the October Report Phase 1, will undoubtedly meet with the same rejection for the same reasons. The CDM Project as described is, in our opinion, faulty and economically un-sound.

In conclusion we notice only 4 percent of the total project work in the CDM Proposal appears to be within the Town of Brookline and that work as itemized has little, if anything to do with flooding or flood control, but appears to concern water quality and waterscape esthetics, more properly a phase 2 or 3 subject.

We believe the effect on flooding as described and outlined in CDM's Proposal will be inconsequential and if installed in total will actually worsen current conditions all at great expense to taxpayers.

A more effective priority list would be:

- | | |
|---|---|
| <p>1) Control flooding
from Tannery Brook-</p> <p>a. Manage contributing drainage basin-</p> <p>b. Use existing retention reservoirs-</p> | <p>Reason; Outage of MBTA transit system impacts Metro and Urban population. Great damage caused to system 10/21/96- Damage and loss 50 million</p> |
| <p>2) Control flooding
from Stony Brook</p> <p>a. Increase flow volume to CSO # 23 Charles R.-</p> <p>b. Manage contributing drainage basin-</p> | <p>Reason; Flooding along conduit environs damaged homes businesses and institutions repeatedly-</p> |
| <p>3) Prevent overbank flows
from Muddy R. main stem-</p> <p>a. Construct spillway from Muddy R. to Fens Pond</p> <p>b. Restore left bank dike to original elevation design, as needed-</p> | <p>Reason; Maintaining nominal river surface level protects left berm bank and flood wall integrity along the MBTA Right Of Way-</p> |
| <p>4) Control flooding
from conduits under Storow Drive</p> <p>a. Clear sediment and blockage at Fens to Charles R. to restore flow-</p> <p>b. Clear sediment in the Brookline Ave. line from Park Dr. to the Charles R. to restore flow-</p> | <p>Reason; Flooding and backup along conduits caused damage to local residential and business properties. These 2 major conduits are the only outlets for the Muddy R. and Back Bay Fens storm water drainage system. Both flow to the Charles River Basin.</p> |

Channel dredging as described and itemized in CDM's proposal may improve water quality and aquatic habitat, but will have no influence on flooding, and therefore is not a priority.

'Day-lighting' at the Sears Lot, as described, will increase flooding according to the Army Corps Engineers and is a poor alternate choice compared to the Sluiceway (surface relief channel) method proposed in the BVAG Report December 1996. 'Day-lighting' will also destroy existing greenspace and presently usable parkland.

Recently a significant portion of 'waterpark' construction was undertaken along the riverfront and flood plain, in Brookline, paralleling Pond Avenue from the Chestnut Rotary to the Curley Bridge, involving Riverdale Brook, Chestnut Brook outfall, Willow Pond, the Herring Hatchery, Village Brook outfall and Leverett Pond with funding by HUD at the Federal level and the State's DEM..

The 2 year project, planned designed and installed by the Town of Brookline was accomplished without MEPA guidance or permits from governing agencies, the River Protection Laws notwithstanding.

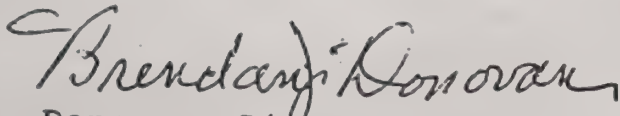
We are most pleased that all future work planned along the river will be regulated by the MEPA process and await the ENF and EIR by the Proponents, describing construction and dredging impacts on among other items, fisheries and wildlife.

Solid and hazardous waste removal, storage and handling is also a major concern, with the focus on public health in and around the waterpark sites involved.] 48

Lastly we will be pleased to be advised of the alternates that the proponents considered, that would have less impact on the land.

Thank you again for the opportunity you provided to us, to comment on this important project plan.

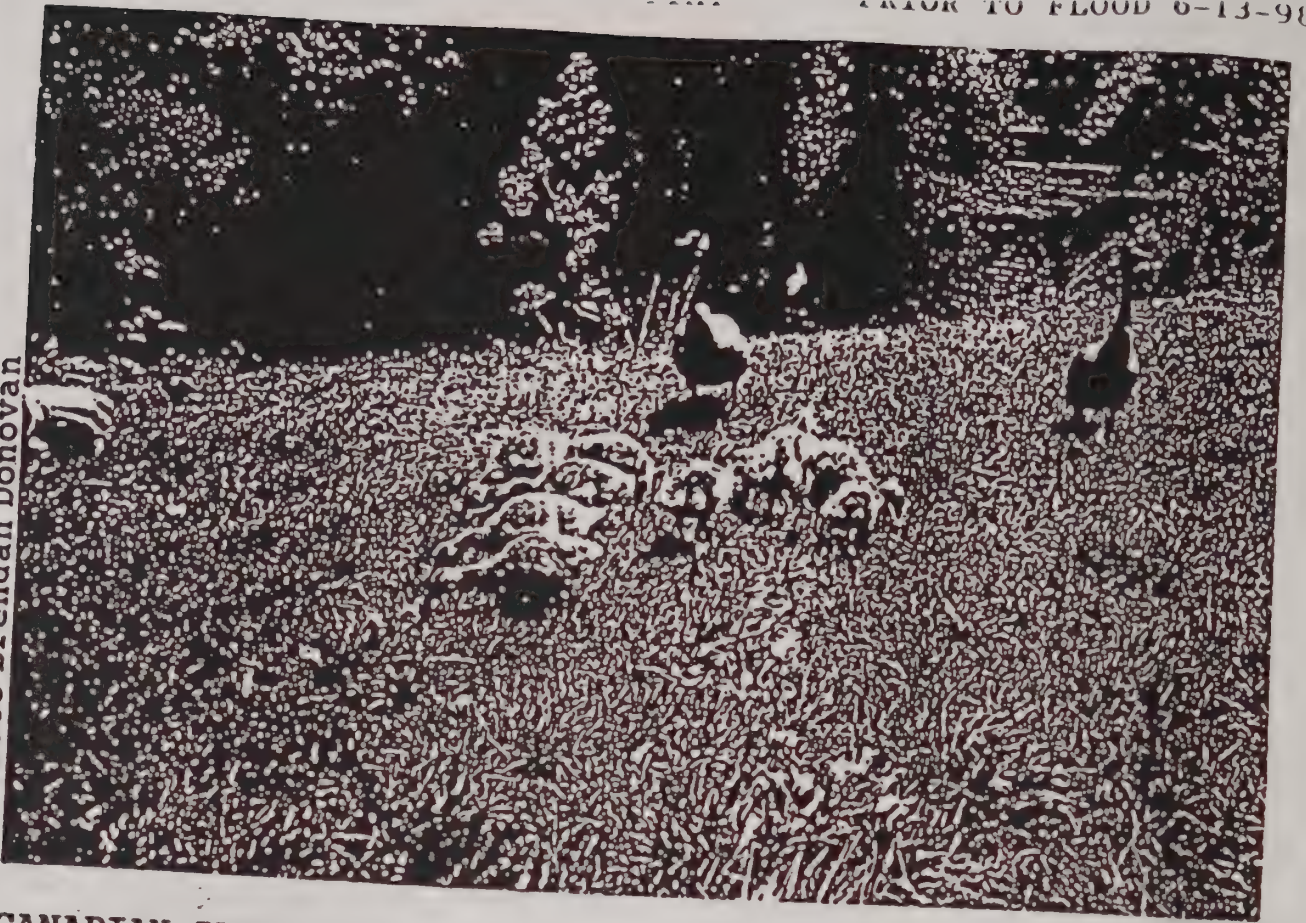
Very truly,



Brendan J. Donovan, Director
Brookline Village Action Groups

CC: Robert Durand, Secretary EOE
James Wickersham, Dir. MEPA
Laura Rome, Staff Analyst MEPA

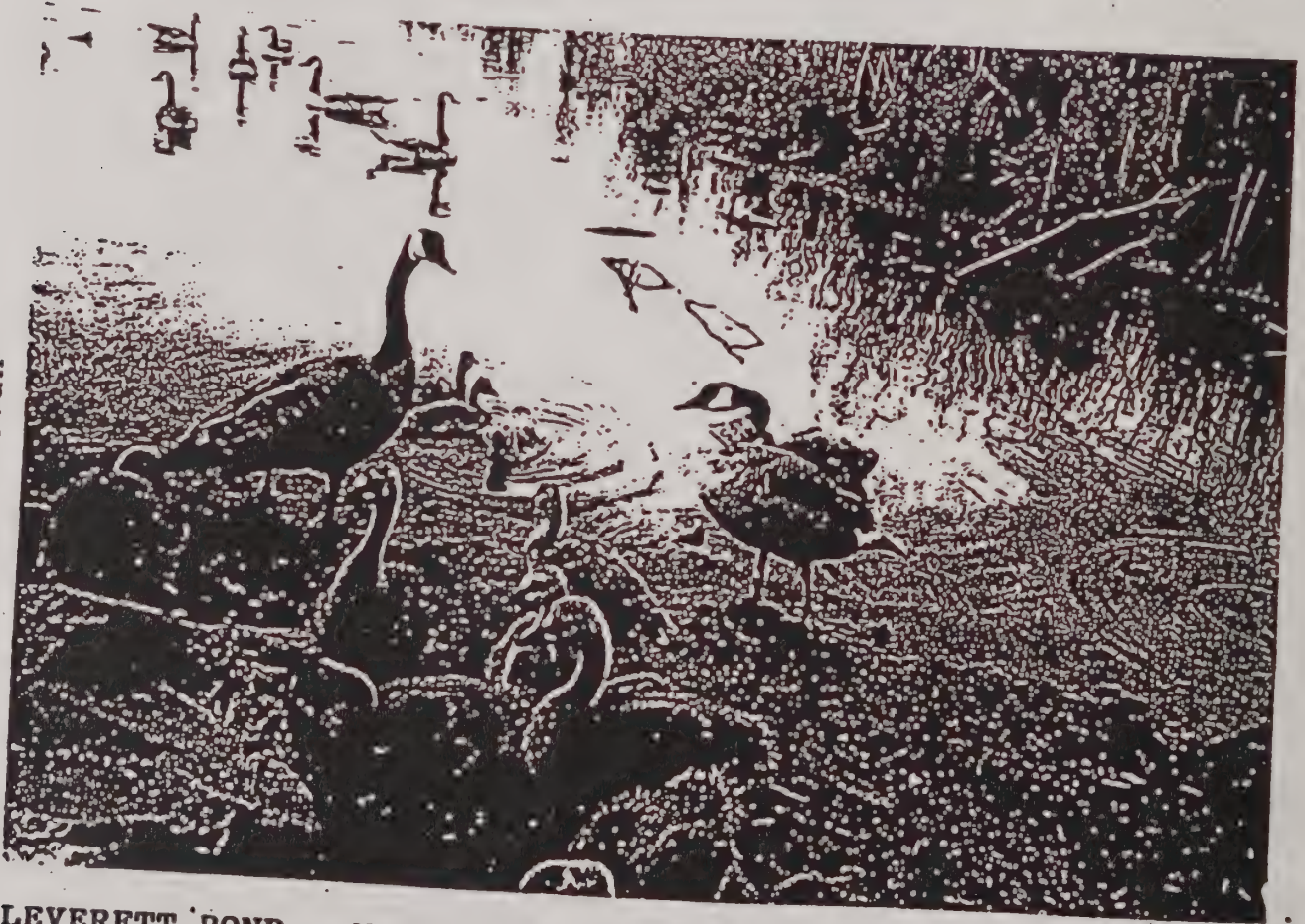
Photo Brendan Donovan



CANADIAN GEESE - Leverett Pond at waters edge island.

OLMSTED PARK - as above

Photo Brendan Donovan



LEVERETT POND - Waterfowl



Town of Brookline

Conservation Commission

H

Stephen Burrington, Esq., Chair
Joanna Wexler, Vice-Chair
Werner Lohe, Esq., Clerk
Kate Bowditch
Barbara Mackey
Robertia Schnoor
Elissa Tonkin

Associates
Keith Beasley, P.E.
Joan Fried, M.D.
Susana Lannik, Esq.
Martin Lazar

April 21, 1999

Bob Durand, Secretary
Executive Office of Environmental Affairs, Attention: MEPA Office
100 Cambridge Street - 20th Floor
Boston, MA 02202
Re: Emerald necklace Restoration Project, EOE A No. 11865

RECEIVED

APR 22 1999

MEPA

Attn: Laura Rome

Dear Secretary Durand:

I am writing to submit the following comments on the environmental notification form for the Emerald Necklace Restoration Project, EOE A No. 11865, on behalf of the Brookline Conservation Commission.

We have worked with the Boston Parks and Recreation Department and Brookline Department of Public Works during their preparation of the *Emerald Necklace Environmental Improvements Master Plan (ENMP): Phase I, Environmental Notification Form*. As the project moves into the environmental review stage, we look forward to a detailed examination of various technical questions, as well as the development of a public review process. There are several particular areas that the Conservation Commission feels need detailed examination and would like to see included in the scope for the Environmental Impact Report.

At the outset, we wish to underscore both our very strong support for the Muddy River Restoration Project and the other improvements to the Emerald Necklace, and the pivotal role of a good MEPA scope and public review process. The ENF follows several years of study and discussion by many agencies and members of the public. The problems of the Muddy River are highly complex, and it has taken a very long time to reach the current level of understanding of those problems and of the roles that various measures should play in resolving them. The Conservation Commission thinks that the Muddy River Restoration project is based on a sound assessment of the current situation and supports the flood mitigation focus of the project. As discussed further below, the flood mitigation benefits of dredging need to be preserved through appropriate measures to control future deposition of solids in the river by stormwater, and the investigation of source control methods will be one of the most important parts of the EIR.

The following comments address specific matters which should be covered in your scope for the EIR.

- 1.) The Town of Brookline needs to ensure that flood mitigation and management be pursued to minimize property damage to the fullest extent feasible. To that effect, the phasing/sequencing of the project should be evaluated carefully. The Town has experienced severe flood conditions due to culvert inadequacies/blockages at the former Sears Parking lot. The Commission requests that the EIR consider phasing of the project to provide expeditious flood relief to Brookline. The analysis may indicate that the culverts at the former Sears Parking Lot area should be addressed following the Charlesgate portion of the project. The costs and benefits of sequencing should be outlined carefully.

- 2.) The Town of Brookline recognizes the need for non-point source pollution controls to manage solids and contaminant loading into the Muddy River. Source controls, including both management practices and structural measures, will need to be recognized and implemented by various responsible parties. The EIR should estimate when, under "base case" conditions involving no source control measures other than those already in place or planned, sediment in the river would return to its present level. It has been suggested that available evidence indicate that sediment would return to present levels in less than ten years. We do not know whether this is in fact the case, but it would be consistent with our observations of the sediment islands in Leverett Pond and elsewhere, which have grown very rapidly from one year to the next in the recent past. It could be difficult to persuade key elements of the public and public bodies with control over funding that it is prudent to invest more than \$40 million in dredging without implementing source control measures to extend its benefits significantly beyond a decade or so.

It is thus essential for the EIR to evaluate alternative source controls for feasibility and effectiveness; provide an appropriate level of detail concerning siting, design and phasing options; estimate costs; enable the project proponents and others to set priorities among cost-effective source controls; and specify what implementation is planned in Boston, Brookline, and/or Newton. Some stormwater quality sampling may be needed in order to determine which source controls or stormwater management approaches are most appropriate. The EIR should assess runoff from the adjacent parkland areas and from the storm drain systems separately, and develop or document suspended solids. The EIR should document stormwater systems for Boston, Newton, and Brookline, including catch basins, as well as existing or planned stormwater management programs in drainage areas; appendices should include water quality sampling results that are available from storm drain investigations. A routine monitoring program should be established to track pollution levels in the Muddy River and test fecal coliform, dissolved oxygen, pH, and total hydrocarbon levels.

- 3.) The report discusses various options for dredging the Muddy River. Through the EIR review process, the proponents should address the following dredging techniques, staging, and disposal issues:
- The various dredging options most appropriate for use in each area of the river with an analysis based upon factors such as, sediment quality, proximity to the Charles River, hydrologic conditions, equipment access and resuspension of sediments.
 - How the dredge material will be tested, handled and transported in each section of the river.
 - The expected staging sites, and how the project will deal with public safety, noise, and storm emergency procedures.
 - Mitigation measures for loss of park use, inconvenience and traffic.
 - Monitoring and reporting of pollution levels in dredge material, downstream conditions and wet weather events.
 - What monitoring program will be used to determine impacts to downstream water bodies, and how dredging techniques will be altered should conditions be determined unacceptable.

The Boston Conservation Commission, Brookline Conservation Commission and/or various community groups may be able to recommend dewatering techniques that minimize impact on the riverfront and vegetation area.

The report recommends that Willow Pond be dredged to a depth of six feet. A previous report recommended a depth of four feet. It would be useful to have an understanding of the cost/benefit, in terms of flood capacity and water quality, of different dredge depths in the various ponds, riverway and fens. If a greater dredge depth is proposed as a means of providing more storage for sediments that will be deposited by stormwater in the future, the costs and benefits of this approach should be compared with those of dredging to a lesser depth, producing that much less sediment for disposal, and implementing source controls that enable more solids to be captured before entering the river in the future.

- 4.) The following aspects of the pipe/conduit cleaning and replacement should be addressed in the EIR in order to provide the public with a greater understanding of the long term and short term benefits of the conduit work. The project plan for cleaning the conduits should be clearly defined. The plan should address what work will be done to ensure that the water level in the Fens and upstream areas does not drop during low flow periods as a result of this work, the impacts expected during construction/cleaning and longevity of cleaning benefits. The surface

treatments to be used for conduits that are opened and treatment of the material cleaned from the conduits should also be evaluated. A final consideration should be the impact on traffic in these areas.

- 5.) The Muddy River Restoration project is the ideal time to take advantage of opportunities to remove pavement, restore wetlands, and enhance wildlife habitat while restoring the intent of the original design by Frederick Law Olmsted. It is important to the Commission that the EIR address impacts on wetlands, wetland replication, wildlife habitat, bank stabilization and replanting. The dredging of the Muddy River will have a significant impact on the wetlands and bank. The EIR should address how the bank edges be defined and marked on the ground, how they will be stabilized during construction, the long term stabilization techniques, the types of plantings, on going maintenance, and a contingency plan if bank failures occur.] 19 20
- 6.) The EIR should set forth a system-wide phragmites management program that optimally analyzes the benefits of all techniques, including herbicide applications and incorporates re-vegetation. The project should prioritize the removal of phragmites stands within the Riverway and Back Bay Fens to improve flow and protect wildlife habitat. The EIR should include the anticipated monitoring and management of phragmites post-dredging.] 21 22
- 7.) The ENMP report proposes to close Netherlands Road and the bridge to all vehicular traffic. This feature could significantly improve the park by connecting otherwise fragmented parcels and creating a much more scenic, congenial, and safe environment for park users and area residents. It would also represent an important step in creating a continuous bicycle facility from Jamaica Pond to the Fenway Area. Although the route is designated State Bicycle Route 1, it is impossible to follow or use safely in those places. The EIR should carefully consider park continuity and bicycle and pedestrian benefits, with reference to both Netherlands Road and Route 9, explaining the status of any plans by the Metropolitan District Commission to create a new bicycle crossing at Route 9 pursuant to the study completed by Bruce Campbell and Associates during the early 1990s. Closure of Netherlands Road would also have traffic and other impacts that need to be carefully studied, however, and the EIR should look closely at those impacts.] 23 24 25

Thank-you for taking these comments into consideration.

Very truly yours,



Stephen Burrington
Conservation Commission Chair

Cc: Fran Beatty, Boston Parks and Recreation Department
Jason Cortell, Cortell Associates
Tom DeMaio, Commissioner, Brookline Department of Public Works

✓
Edward J. Burke
151 Park Drive #35
Boston, Mass. 02215

RECEIVED

APR 22 1999

MEPA

I

April 22, 1999

Robert Durand, Secretary
Executive Office of Environmental Affairs
100 Cambridge Street, 20th Floor
Boston, Mass. 02202

Re: EOEA# 11865, Emerald Necklace Environmental Improvements Master Plan, Phase 1 Muddy River Flood Control, Water Quality and Habitat Enhancement.

Dear Secretary Durand:

As one who has been involved with the restoration of the Muddy River for over the past twenty years, I am pleased to respond to the ENF. There are several areas that have me deeply concerned:

- The lack of notice to the general public. This was evident at the MEPA scoping session, as there were only eight citizens at the evening session, four of them being activists.] 1

- The dredging priorities should be:

Removal of obstruction at Ipswich Street at Mass. Pike.

Daylighting of the Sears Parking Lot and Fens Pond from Brookline Ave. to Higginson Circle.] 2

Increase the capacity of culvert, Muddy River at Storow Drive.

This sequence would alleviate flooding in both the Fenway and Brookline Communities.

- The sites mentioned for dewatering are unacceptable:] 3

Sears Parking Lot, not only for the reason stated above, but that the new Landmark Center will be opening in the spring of 2000 with over 4000 employees.

Clemente Field, there are over 200 residences directly on Park Drive, with the prevailing wind, these units would be uninhabitable.

- Before dredging begins, the river bank boundaries must be established. The exact delineation of river banks are critical, especially in the area of the Victory Gardens.] 4
- Throughout this document we see "Best management practices" these currently exist only on paper, and the minds of some, and are not a reality. The only way that we can be sure that this will happen in the future is with EOEAs physical oversight.] 5
- The root system of many of the mature trees extend under the path system and all efforts should be made to safeguard these.] 6
- The phragmites act as habitat for birds, ducks and other small animals and also as both a visual and sound buffer. I am not convinced that appropriate studies of the phragmites have been conducted as to their use as habitat.] 7

This river is an important part of the environment that makes Boston and Brookline wonderful communities to live in. Care should be taken on any issues that effects the river and its environs. Thank you for your consideration in this matter.

Yours truly,



Edward J. Burke

Charles River Watershed Association

April 22, 1999

Bob Durand, Secretary
Executive Office of Environmental Affairs
Attention: MEPA Unit
100 Cambridge Street, 20th Floor
Boston MA 02202

FATED
4/22/99
RECEIVED
APR 28 1999
MEPA J

RE: EOEA#11865, Phase I Muddy River Flood Control, Water Quality, and Habitat Enhancement

Dear Secretary Durand,

Thank you for the opportunity to comment on the ENF for the proposed Muddy River Phase I improvements. The Charles River Watershed Association has spent many hours working for the Muddy River, and we are committed to continuing our participation as the current process moves forward. The proposed project is complex, and draws in many stakeholders, each bringing different concerns to the table: therefore, we support the proponents' request for a Citizen's Advisory Committee which will provide a forum for exchange of concerns as the plan progresses. Advisory Committee meetings should be well-publicized, broadcast on local access cable where possible, and minutes should be made available in local libraries.

CRWA agrees that dredging is necessary to improve the Muddy River system, both in terms of water quality and flood control. However, recreational users, as well as fish and wildlife, must be protected to the maximum extent practical both in the Muddy River itself and in the Charles River. CRWA has several specific comments and questions regarding the project, detailed below.

Dredging Schedule

In addition to considering anadromous fish runs in the dredging schedule, project proponents should consider peak recreational periods as well. For example, we recommend that limited or no dredging activities occur during peak recreational periods in the Charles River Basin to avoid exposure to suspended adsorbed and dissolved hazardous chemicals.] 1

Silt Curtains

Silt curtains should be employed in series to provide redundant systems to protect downstream turbidity levels. As silt curtains are not foolproof, we recognize that the Muddy River will be severely impacted during this period, but every precaution should be taken to reduce the impacts wherever possible. Appropriate technology should be put in place at the outlet to the Charles to minimize sediment loads and associated pollutant loads due to agitation of the contaminated sediments and associated pollutant release.] 2
] 3

Silt curtain effectiveness is limited by flow-through velocity, and therefore they may be ineffective during periods of moderate or high velocity. The proponents should describe when and under what conditions the silt curtain effectiveness may be reduced. The proponents should consider suspending or curtailing dredging and other instream activities during these periods.] 4



In addition to extending to the channel bottom, the curtains must also extend to both left and right channel banks. This should be clearly stated in future project documents.

Staging Area

The former Sears parking lot has been proposed as a staging area for the entire project, for the duration of the dredging. The ENF states that this area is a "bottleneck" for flow from upstream, and therefore is a major cause of flooding in Brookline. We urge the proponents to identify other potential staging areas to for discussion with the CAC. We oppose conducting any work not directly related to flood control and mitigation of dredging impacts downstream of the former Sears parking lot before upstream flooding has been addressed.

Settling Basins

The sizes and proposed locations of all settling basins should be thoroughly documented in the EIR. We expect that siting of settling basins will be a topic for lively discussion for the CAC.

Further, the proponents should include the expected timeline for these basins to be online, as well as their removal – or modification if they are to be left in place. How long are odors expected to be released from the basins? How often will lime slurries be applied, and how effective are they at controlling odors?

The proponents have not described the fate of the settling basin liquids. How and where will they be disposed? Any discharge back to the Muddy River should be closely monitored and regulated. Alternatively, sewer system discharge should be considered.

In-stream Performance Standards

The EIR should propose in-stream performance standards for adsorbed as well as dissolved contaminants. Environmental monitoring is important to assessing the impacts of the project, and reporting excursions to authorities is described in the ENF. In addition, an environmental response plan should detail reporting thresholds and at what thresholds will activities cease.

We recommend elutriate analyses to determine the impact of sediment agitation on in-stream water quality. Contaminated sediments will likely release contaminants to the water column during dredging, quantification of the expected release should be included in the EIR. Elutriate analyses simulate the agitation of dredging by shaking the sediment sample, then both filtered and unfiltered samples are analyzed for contaminants of concern. As with suspended solids, we recommend that the proponents develop a response plan describing what levels of instream contaminant concentrations would results in curtailing or modifying dredging activities. The proponents should be able to predict the depression in dissolved oxygen due to sediment resuspension using empirical methods as well. That sediment resuspension "may result in fish loss" (ENF, page 17) is too vague a statement, and should be clarified.

The proponents should consider biomonitoring during dredging to assess instream impacts on sensitive species. We refer the proponents to dredging projects in Long Island Sound and New Bedford Harbor which included "real-time" biomonitoring to provide feedback during dredging of hazardous material-laden sediment.

Equipment Impacts

Several areas to be dredged would accommodate several different dredging methods. Where the proponents have a choice of dredging methods, we urge them to choose the most environmentally protective.

15

If track-mounted excavators are used, will they require water level drawdown? If so, how much and for how long? Will the excavators be working from within the waterway, or will they operate from the banks? If they operate from the banks, what bank damage can be expected, and what measures will be taken to minimize impacts on banks?

16

Will any of the dredging activities create stepped banks? If so, the steps should be smoothed to provide sufficient habitat for the flora and fauna. Stepped banks pose obstacles for some types of wildlife.

17

Wetland Restoration

The proponents should describe plantings and maintenance plans for the restored wetlands. Control of invasive and exotic plants must be addressed.

18

Upstream Controls

The long-term plan must place more emphasis on the use of upstream controls. Given the expense of the project, as well as the environmental impact, the life of this project should be extended as much as possible. Stormwater management plans for Boston, Brookline, and Newton should be documented in the EIR.

19

Demonstration upstream control BMPs should be implemented as part of the overall project, in addition to controls proposed by Boston, Brookline, and Newton.

20

We strongly support over-dredging near significant inlets to the system, as this will further extend project life and focus deposition into these zones. Maintenance plans and responsibility for maintenance should be described in the EIR. Inlet controls, however, are not as effective as upstream controls, and should not be considered a replacement for them.

21
22

Thank you again for the opportunity to comment. We look forward to a much-improved Muddy River.

Sincerely,

Pamela DiBona

Pamela DiBona
Environmental Affairs Coordinator

cc: Jason M. Cortell, Cortell and Associates
Justine Liff, Boston Parks and Recreation
Boston Conservation Commission
John Sullivan, Boston Water and Sewer Commission
Peter Ditto, Brookline Department of Public Works
Brookline Conservation Commission
Betsy Shure-Gross, EOE
Mark Smith, EOE

Peter Phippen, EOE Basin Team Leader
Samantha Overton, MDC
Jack Malone, Emerald Necklace Conservancy
Paul Mentag, Fenway Alliance
Irene Gillis, Restore Olmsted's Waterway
Isabella Callanan, Friends of the Muddy River



CITY OF BOSTON
THE ENVIRONMENT DEPARTMENT

Boston City Hall, Room 805 • Boston, MA 02201 • 617/635-3850 • FAX: 617/635-3435

April 26, 1999

Robert Durand, Secretary
Executive Office of Environmental Affairs
100 Cambridge Street, 20th Floor
Boston, MA 02202
Attention: Laura Rome, MEPA Unit

Post-It* Fax Note	7671	Date	4/27/99	# of pages	12
To	Laura Rome	From	William J. Kelly		
Co./Dept.	MEPA	Co.			
Phone #		Phone #	635-4421		
Fax #		Fax #			

The Emerald Necklace Environmental Improvements Master Plan, Phase I Muddy River Flood Control, Water Quality and Habitat Enhancement, Environmental Notification Form
EOEA #11865

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APR 27 1999

MEPA

Mr. Secretary Durand:

The City of Boston has reviewed the Expanded Environmental Notification Form (ENF) for the above referenced project and hereby submits the following comments.

The City of Boston Parks and Recreation Department (BPRD) and Brookline Department of Public Works have collaborated to develop a plan for the restoration of the Muddy River system and rehabilitation of the Emerald Necklace parklands. This plan is the first phase of the BPRD's long-term *Emerald Necklace Environmental Improvements Master Plan* (Master Plan) that contains 52 proposed restoration projects. The projects will include new and rehabilitated bridges, bicycle paths, restoration of historic structures and landscape improvements. It is expected that full implementation of the Master Plan will take no less than 15 years.

The proponents are seeking an Area-wide Review under the Special Review Procedures of MEPA. The project area is extensive, projects will be phased depending upon funding availability and multiple environmental and community stakeholders have been and will continue to be involved in the detailing, implementation and monitoring of the Master Plan. As part of the Special Review Procedure, a Citizen's Advisory Committee (CAC) would be established to develop a Master Plan Environmental Impact Report (EIR). Phasing, subject to revision, may be as follows:

- Phase I, years 0-5, - Muddy River dredging, flood control, water quality improvements, aquatic/riparian habitat enhancement, and Best Management Practices (BMPs);
- Phase II, years 5-10) - landscape improvements, revegetation, traffic circulation improvements and building/bridge restoration; and,
- traffic circulation improvements and building/bridge restoration.

The bank-to-bank sediment dredging project will be the manner in which Phase I goals for the Muddy River are met. Improvements in water quality, increased flood control and enhancement of the

Thomas M. Pollak, Director

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Thomas M. Menino, Mayor

Emerald Necklace Environmental Improvements Master Plan, Phase I Muddy River Flood Control, Water Quality and Habitat Enhancement, ENF continued

pg 2

aquatic/riparian habitat are the primary objectives. In addition, the Boston Water and Sewer Commission (BWSC) and Brookline Department of Public Works will improve drainage culverts and gatehouses. Controls for Phase I and the remainder of the Master Plan implementation will be determined through the work of the CAC.

Projects in Phase I are the dredging of the following waterbodies: Ward's Pond; Willow Pond; The Riverway; Leverett Pond; and the Back Bay Fens. Dredging depths will correspond to the pre-industrial stream bed. The dredging will deepen the Muddy River system, upgrade flood control, remove nuisance vegetation, improve fisheries and wildlife habitat, improve water quality; and promote and enhance recreational use of parkland.

Dredging will temporarily disturb about 1 acre of upland area due to equipment movement and the areas that will be used to treat dredged materials. Approximately 41 acres of land under water, 1.6 acres of bordering vegetated wetlands, 5.8 acres of bank, bordering land subject to flooding and the buffer zone will also be impacted.

Dredging will require a staging area or areas for: trucks and equipment; equipment for separating sediment from water; the mixing of lime and sediment; and filtration of return water. Should hydraulic or Eddy Pump dredging take place, sediment and water separation devices and filtration of return water may require larger staging areas than with other types of dredging equipment.

The ENF notes that the former Sears parking lot and other minimally vegetated and accessible areas are possible staging locations. We understand from the March 16, 1999 MEPA Consultation Session that the developers of the former Sears warehouse are opposed to use of the former parking lot and that Clemente Field in the Back Bay Fens is under consideration for staging. We further understand that a decision may be made to daylight the former parking lot early in the project as a flood mitigation measure.

This department would resist the use of Clemente Field for staging as it is a frequently used recreational area for such activities as baseball, softball and jogging. The Fenway and adjacent neighborhoods contain no similar areas for such recreation. We ask that the proponents make every effort to find an alternative location.

Daydown areas will be necessary along the length of the Muddy River. A preliminary assessment of areas of vegetation to be protected will be made during the Phase I EIR process.

Due to the unique characteristics of each of the waterbodies identified for Phase I work, the Boston Conservation Commission (BCC) prefers to permit separately the work for each area. BCC staff is, however, open to discussing alternative permitting arrangements that meet the needs of the BCC and proponents. We recommend that BCC staff be contacted as soon as possible to discuss this issue.

Emerald Necklace Environmental Improvements Master Plan, Phase I Muddy River Flood Control,
Water Quality and Habitat Enhancement, ENF continued
Page 3

Staff of the Environment Department and the BCC are concerned that revegetation will not begin until Phase II of the Master Plan, years 5 to 10. Such a gap may allow for the regrowth of invasive, opportunistic vegetation and for erosion on the riverbanks. We ask that the proponents evaluate ways to make this activity a greater project priority.

The ENF does not specifically mention restoration and improvement of existing walkways in Emerald Necklace areas. Sidewalks in the Back Bay Fens, for example, are in significant disrepair, presenting a hazard to pedestrians. We ask that this issue be discussed in the Draft Environmental Impact Report (DEIR).

A number of large-scale development projects have been proposed for the Fenway and Longwood Medical Areas and it is likely that there will be additional development proposed. Some construction projects will overlap with the extended time-frame for implementation of the Master Plan. For example, Emmanuel College, located at The Fenway and Brookline Avenue, has proposed an extensive building program that will begin in the year 2000 and continue to 2010. The proponents should ensure that they are a part of construction coordination in the area.

The Environment Department has enclosed with this letter a set of guidelines for the construction and operating periods of all projects within the City of Boston. These guidelines are designed to protect, in the short and long term, the environmental health of those who live and work in Boston and to preserve and promote the integrity of our natural resources. We ask that the construction elements of the guidelines be implemented for this project.

Please note that parking is at a premium in many areas identified for Phase I work, particularly the Fenway and the Back Bay Fens. It is important that the proponents address the issue of construction worker transit and we suggest that such strategies as subsidized MBTA passes, secured on-site storage of worker's tools and remote parking with shuttles for construction workers. The enclosed guidelines contain additional specific suggestions for minimizing construction worker use of single occupant vehicles (SOVs).

The Boston Landmarks Commission (BLC) is very supportive of the goals of the *Emerald Necklace Environmental Improvements Master Plan*. As the BLC understands it, one of the primary goals of dredging and revegetation is to restore the original design intent of one of Frederick Law Olmsted's earlier public landscape projects. The ENF does not adequately address the historic significance of the landscape itself, which is a local Landmark in Boston and Brookline and is listed on the National Register of Historic Places and the State Register of Historic Places. It would be helpful for the historic/archaeological section of the DEIR to summarize construction and permanent impacts on a historic-designed landscape. This section should also address minimization and mitigation of construction impacts from the operations associated with dredging, whether there will be any permanent changes to shoreline and land formations, and if/how removal of vegetation and new plantings will restore the original design intent.

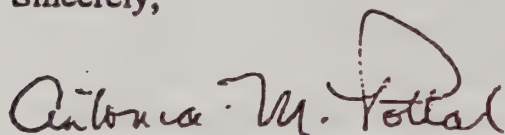
Emerald Necklace Environmental Improvements Master Plan, Phase I Muddy River Flood Control,
Water Quality and Habitat Enhancement, ENF continued
gc 4

Page 6 notes federal, state and local preservation reviews and approvals. These agencies should be included in the more detailed description of all environmental permits, Section 4.0, within the *Emerald Necklace Improvements Master Plan* (Attachment 4). The BLC looks forward to reviewing the overall project and the subsequent phases.

Due to the archaeological, historic resource and wetlands elements of the proposed project, we ask that the CAC include designees from both the BLC and BCC.

Thank you for the opportunity to offer comment. We look forward to the progress of this project.

Sincerely,



Antonia M. Pollak
Director

cc: Andrea d'Amato, Chief of Environment Services
Justine Liff, Commissioner, BPRD

Enc.

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CITY OF BOSTON

THE ENVIRONMENT DEPARTMENT

Boston City Hall, Room 805 • Boston, MA 02201 • 617/635-3850 • FAX: 617/635-3435

CITY OF BOSTON ENVIRONMENT DEPARTMENT GUIDELINES FOR RESPONSIBLE AND SUSTAINABLE DEVELOPMENT

Instruction

All construction management plans for Boston projects should address in detail issues including truck scheduling, truck scheduling and construction worker scheduling, transportation and parking. Truck drivers should be required by contract to use routes that minimize, to the greatest extent possible, the use of residential streets. Maps showing approved truck routes should be provided to all suppliers, contractors and sub-contractors.

Residential neighbors should be notified of the name and telephone number of a construction contact person for all Boston projects. Each project site should have signage identifying the project, General Contractor and a contact telephone number.

There should be no stockpiling of fill, equipment or materials, including pipe, overnight and on weekends on public property or public ways.

Air and Stormwater Quality

One of the primary goals of this department is to improve air quality. Reducing the number of single occupant vehicles entering and leaving the city is not related just to traffic impacts but is essential to air quality improvement. As such, we are concerned about the use of single occupant vehicles at any time, not just at peak traffic times. As part of an effort to discourage the use of single occupant vehicles, we strongly encourage the proponent to require as part of construction contracts that contractors offer incentives for workers who carpool or use public transit to reach the job. Car pooling, shuttles from parking, subsidies for MBTA passes and providing secured on-site storage for construction equipment and tools and supplies (so they do not have to be transported each day) are effective strategies. We urge that deliveries be scheduled for off-peak hours.

Vehicles in Massachusetts are not permitted to idle for more than five (5) minutes unless the engine is required to operate lifts or refrigeration units (MGL C. 90, Section 16A and 310 CMR 7.11). This law is enforced during the construction period. Trucks removing materials or debris from the site must be required to minimize the air quality impacts from fugitive dust (MGL C. 85, Section 36).

Connecting stationary noise producing equipment such as pumps and generators to the Boston sewer grid should be considered as a way to reduce emissions.

There are a number of ways to prevent dust originating at construction sites from being transmitted to adjacent sites and roadways and into storm drains:

- a wheel wash, with proper provisions for runoff, can be installed;
- in the absence of a wheel wash, the contractor should place and maintain one to two inches of gravel no less than ten (10) feet in length at truck entrances and egresses;
- all aggregate piles and excavated materials should be sprayed with Soil Cement or calcium chloride overnight and on weekends;
- a regular schedule of mechanical street sweeping should be instituted. We have found that vacuum sweepers are the most effective type of sweeper in areas where excavation work is being performed. They help to prevent excessive tracking and minimize the amount of material that enters storm drains; and
- erosion and sedimentation control is best approached on two levels. First, Best Management Practices (BMPs) prescribe that unconsolidated materials should be contained at their source. Catch basins should then be protected with the use of filter fabric and haybales to minimize the silt carried in runoff.

Any abrasive blasting or chemical cleaning at a project must be done in accordance with a permit issued by the Boston Air Pollution Control Commission (APCC) located in the Environment Department offices. Permits are required for both interior and exterior work.

B. Geotechnical and Groundwater Impacts

1. The protection of existing buildings adjacent to and adjoining building sites must receive serious attention prior to and during construction. Groundwater levels in various areas of the city have been drawn down, requiring careful assessment and management of groundwater conditions.
2. For major construction projects, a monitoring program including monitoring wells must be established prior to excavation. A plan of the area should be developed so that wells are established permanently and can be used by other entities for groundwater monitoring. Establishing well locations must be coordinated with the Boston Water and Sewer Commission (BWSC).
3. During environmental review of proposed projects, an analysis of existing sub-soil conditions and groundwater levels should be conducted. Where groundwater levels are found to be below acceptable standards, adjacent structures and subsurface structures should be inventoried to identify conditions and foundation support systems. A number of foundation systems for proposed developments should then be conceptualized and evaluated for potential impact to the area. Excavation systems must also be identified and analyzed for impacts. The potential for ground movement and settlement during excavation and potential impacts on adjacent structures, transportation systems and utility systems should be identified as should a range of mitigation measures.
4. In areas where groundwater issues have been identified or where historic resources are adjoining or cent to project sites, a comprehensive monitoring program should be established for the construction period that will indicate if vibration, soil displacement or dewatering impacts to

Boston Environment Department Guidelines Page 3

rounding properties are resulting from construction activities. In addition, in such situations, lenishment of subsurface flow patterns must be considered.

C. Noise

1. In order to balance the need to construct and develop with the rights of residents to the quiet enjoyment of their homes, the City of Boston limits construction hours to 7:00 AM to 6:00 PM, Monday through Saturday. The Regulations for the Control of Noise in the City of Boston limit to 75 dBA (L₁₀ level) daytime construction noise that affects residences.

2. Noise originating from construction sites can be moderated by adopting the following measures:

- decking on roadways should be secured so that there is no rattling when traffic passes over;
- back-up alarms on vehicles and equipment should be either ambient-sensitive type or manually adjustable;
- contracts should include language requiring contractors to properly maintain equipment;
- as small a hoe ram, pile driver and jackhammer as possible should be used and only powered to the degree needed to perform the work. Hoe rams should be equipped with noise suppression enclosures (such as the Allied Hy-Ram);
- stationary noise producing equipment such as pumps and generators should be placed as far away as possible from residential receptor locations;
- engine housing panels on all equipment should be kept closed; and
- when not in use, equipment should be shut off.

D. Recycling and Reuse

1. Any asphalt removed from project sites should be reused on or off site or should be recycled. This should be a standard condition of construction contracts for all Boston projects.

2. Construction laydown areas should contain sufficient space for the segregation of construction waste and it should then be reprocessed, recycled or reused.

3. Some building materials not appropriate for recycling and some excess construction materials may be suitable for donation to the Building Materials Resource Center (100 Terrace Street, Boston, MA 02120, 617-442-8917). This non-profit center offers, for only a handling fee, new and used materials for low and middle income homeowners. Contractors can save disposal fees while supporting a local organization.

4. Please see Section E.3. (Solid and Hazardous Waste and Recycling) under Environmental Protection for information on obtaining the Recycling Service Directory and Markets Guide for Massachusetts which provides information on resources for recycling wood, construction and demolition debris.

Boston Environment Department Guidelines

Page 4

Environmental Protection

A. Air Quality

1. Permanent "No Idling" signs should be posted at all loading/delivery docks, service and drop-off areas on project sites advising vehicle operators of the proponent's expectation of compliance. The state law prohibiting idling for more than five minutes should then be enforced during operation of the project:

2. Vents from garages should be located so that they will not affect pedestrians and bicyclists.

3. Any interior or exterior abrasive blasting or chemical cleaning at the project must be done in accordance with a permit issued by the Boston Air Pollution Control Commission (APCC) located in the Environment Department offices.

B. Noise

1. The Regulations for the Control of Noise in the City of Boston, administered by the Boston Air Pollution Control Commission (APCC) through this department, limit noise levels in the city. Noise affecting a residence, regardless of the zoning status of the noise source, cannot exceed 60dBA from 7:00 AM to 6:00 PM and cannot exceed 50 dBA from 6:00 PM to 7:00 AM. Noise generators subject to these limits include delivery and trash pick-up vehicles.

2. This department frequently receives complaints from citizens objecting to the level of noise disturbance from externally placed equipment, vents and emergency generators. Equipment should be properly sized to serve the proposed project but should not provide excess capacity. To minimize the noise impact of emergency generators during the operation of the projects, they should be tested the minimum number of times recommended by the manufacturer at times when ambient noise levels in the area are high. Acoustical enclosures should be considered to ensure compliance with noise regulations.

3. We recommend that loading/delivery areas be fully enclosed so that neighbors are not disturbed. If such areas are not to be enclosed, a plan for visual screening and noise attenuation should be developed.

C. Water Quality and Conservation

1. The Boston Water and Sewer Commission (BWSC) spends more than \$300,000 annually for the disposal of materials removed from catch basins. This cost does not include labor and general operating and maintenance costs. In addition, the quality of stormwater is receiving increasing regulatory attention as it is a primary contributor to the condition of receiving water bodies. We hope that developers will find it appropriate to help educate the public and further improve the water quality of local water bodies by agreeing to the permanent installation of plaques at all storm drains that bear warning "Don't Dump - Drains to Boston Harbor." Further information on obtaining these plaques is available from the Engineering Division at the BWSC (617-330-9400).

Boston Environment Department Guidelines
Page 4

Environmental Protection

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1. The Regulations for the Control of Noise in the City of Boston, administered by the Boston Air Pollution Control Commission (APCC) through this department, limit noise levels in the city. Noise affecting a residence, regardless of the zoning status of the noise source, cannot exceed 60dBA from 7:00 AM to 6:00 PM and cannot exceed 50 dBA from 6:00 PM to 7:00 AM. Noise generators subject to these limits include delivery and trash pick-up vehicles.
2. This department frequently receives complaints from citizens objecting to the level of noise disturbance from externally placed equipment, vents and emergency generators. Equipment should be properly sized to serve the proposed project but should not provide excess capacity. To minimize the impact of emergency generators during the operation of the projects, they should be tested the minimum number of times recommended by the manufacturer at times when ambient noise levels in the area are high. Acoustical enclosures should be considered to ensure compliance with noise regulations.
3. We recommend that loading/delivery areas be fully enclosed so that neighbors are not disturbed. If such areas are not to be enclosed, a plan for visual screening and noise attenuation should be developed.

C. Water Quality and Conservation

1. The Boston Water and Sewer Commission (BWSC) spends more than \$300,000 annually for disposal of materials removed from catch basins. This cost does not include labor and general operating and maintenance costs. In addition, the quality of stormwater is receiving increasing regulatory attention as it is a primary contributor to the condition of receiving water bodies. We hope developers will find it appropriate to help educate the public and further improve the water quality of local water bodies by agreeing to the permanent installation of plaques at all storm drains that bear the warning "Don't Dump - Drains to Boston Harbor." Further information on obtaining these plaques is available from the Engineering Division at the BWSC (617-330-9400).

D. Energy Conservation and Pollution Prevention

1. New construction and rehabilitation projects provide an opportunity to protect the environment and minimize utility costs for future owners and occupants with the installation of energy and resource conserving devices. Choices should be made in accordance with the principle of sustainability and should include the installation of energy efficient appliances, lighting and heating systems. Low flow plumbing fixtures should include water conserving aerators.
2. The U.S. Department of Energy (DOE) funds the **Energy Efficiency and Renewable Energy Clearinghouse (EREC)**. EREC provides, at no cost, answers to simple questions or complex technical questions and requests for energy-related business assistance. Information is available on such topics as efficient commercial and residential equipment and materials, renewable energies technologies and industrial technologies. A description of EREC, methods for accessing it, and an order form for obtaining specific information are furnished at the end of these guidelines.
3. The use of solar energy for heating water and photovoltaics for other electricity needs should be thoroughly investigated and results reported in environmental review documents. The DOE Office of Energy Efficiency and Renewable Energy is sponsoring the **Million Solar Roofs Initiative (Initiative)**. The aim of this program is to install solar energy systems on one million buildings in the U.S. by 2010 by building a strong market for solar energy applications. This Initiative will generate environmental and economic benefits as greenhouse gases and other emissions will be reduced and high-tech jobs will be created. As Massachusetts is a favorable market for grid-connected photovoltaic systems, we have also attached a copy of **Customer-Sited Photovoltaics: Focusing on Markets That Really Shine**. We encourage the serious consideration of this energy option.
4. The Federal Environmental Protection Agency (EPA) sponsors two voluntary programs that combine energy efficiency, pollution prevention and cost savings for participants.

The **Green Lights** program has, in six years, attracted 2,300 businesses and organizations that have found that energy efficiency makes good business sense through cost savings. The program is designed to retrofit existing buildings with efficient lighting systems. Since 1991, Green Lights participants have prevented the release of almost 5 billion pounds of carbon dioxide and 17 million pounds of nitrogen oxides and have saved a total of \$254 million. Green Lights Allies, companies in the lighting and energy industry, can assist with new construction by recommending efficient technologies.

The **Energy Star Buildings** program is a five stage strategy that strives to reduce operating costs, properly size equipment, improve indoor air quality, maximize occupant comfort and decrease the costs associated with the phaseout of CFC refrigerants. Again, the program is aimed at existing structures but Energy Star Building Allies are an excellent resource for new construction.

The address for these programs is 401 M Street, SW, Washington, DC 20460. The Energy Star fax line can be reached at 202-233-9659 and the Green Lights/Energy Star Hotline is available at 1-888-782-7937 (fax 202-775-6680). A free subscription to the Green Lights & Energy Star Buildings Update

Boston Environment Department Guidelines

6

D. Energy Conservation and Pollution Prevention

1. New construction and rehabilitation projects provide an opportunity to protect the environment and minimize utility costs for future owners and occupants with the installation of energy resource conserving devices. Choices should be made in accordance with the principle of availability and should include the installation of energy efficient appliances, lighting and heating systems. Low flow plumbing fixtures should include water conserving aerators.

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Boston Environment Department Guidelines

Page 8

3. WasteCap of Massachusetts, with the Massachusetts Department of Environmental Protection (DEP), compiles and produces the Recycling Service Directory and Markets Guide for Massachusetts. This directory provides information on recycling service providers who accept, collect or purchase recyclable materials and other sources of recycling market information. Such materials include fluorescent lamps and ballasts, for example. The directory can be obtained by calling the DEP InfoLine at 617-338-2255 from the 617 area code or outside Massachusetts or at 800-462-0444 from other Massachusetts area codes.

F. Wind, Shadow and Daylight Analysis

These issues should be assessed, their potential impacts fully evaluated and mitigation measures identified.

Transportation

1. The issue of Transportation Demand Management (TDM) should be a critical area of focus for institutional, commercial and mixed use developments. TDM programs are designed to reduce the use of single occupant vehicles (SOV), increase the use of transit and bicycles and encourage pedestrian travel. The assessment of TDM measures should include the following:

- for projects where parking exists or will be added, the actual cost of operating and maintaining parking and the amount charged to those who will park should be evaluated. The difference will provide information on whether or not parking is subsidized and to what extent;
- parking cash out;
- the subsidy of MBTA passes with a *pro rata* subsidy for part-time employees/students;
- incentives for employee carpooling/vanpooling such as providing geographic matching, parking fee discounts, preferential parking for ridesharers and an "emergency ride home" program;
- in order to ensure that CARAVAN vehicles can be accommodated in parking facilities, the clear height of those facilities must be no less than seven feet;
- bicycle racks in secure, well-lighted areas protected from the elements;
- shower and locker facilities for walkers and cyclists;
- designation of a transportation coordinator to distribute transportation information and sponsor transportation-related events; and
- joining or creating a Transportation Management Association.

We also suggest examination of "Commuter Check," a tax-free employee benefit that reduces the cost of transit. Further information on this program may be obtained through CARAVAN for Commuters, Inc. at 10 Park Plaza, Suite 2180, Boston, MA 02116 or at 1-888-4-COMMUTE (1-888-426-6883);

2. Flextime can help to reduce traffic congestion at peak times and we recommend it as part of a comprehensive strategy when it can be integrated into the structure of a business enterprise.

March 2, 1999

✓
RECEIVED

MAR 5 1999

MEPA

EOEA

MEPA Office, Attn. Laura Rome
100 Cambridge St. / 20th Floor
Boston, MA 02202

Dear Ms. Rome;

This is a Comment on the Emerald Necklace Environmental Improvement Master Plan, Phase 1.

One aspect I think you must address as you go forward, is the impact this 'end-to-end' dredging will have on the benthic invertebrates in the Muddy River. As you plan to remove most of the unconsolidated sediments you will therefore be removing most of the infauna and much of the epifauna along with their habitat. Since these organisms play a significant role in the trophic dynamics of this river, i.e. are eaten by the fish and other vertebrates, your action must necessarily have a disruptive impact on the existing biological community.

This may not be a major obstacle since eventually re-invasion could occur - but you must address this question of how you see the project impacting the insect larvae, worms, crustaceans, etc. and any plans you may have for re-stocking afterwards. The U.S. ACOE has conducted a survey so we do know pretty well what is there now (ref. M. Penko, ACOE).

I have no wish to delay action on this much needed project, but rather to point to this gap in order that it not be raised at the 11th hour and become an obstacle.

Best Regards,

E.B. Cutler

Edward B. Cutler, PhD
14 Monmouth Crt.
Brookline, MA 02446

and

Department of Invertebrate Zoology
Museum of Comparative Zoology
Harvard University
Cambridge, MA 02138

Telephone: 617-738-0107

e-mail: CutlerEB@aol.com

URL: <http://www.mcz.harvard.edu/Departments/InvertZoo/as.fldr/cutler/cutler.htm>



The Commonwealth of Massachusetts

House of Representatives

State House, Boston 02133-1054

PAUL C. DEMAKIS
REPRESENTATIVE

8TH SUFFOLK DISTRICT

BOSTON • BROOKLINE • CAMBRIDGE

ROOM 446, STATE HOUSE

TEL (617) 722-2460

Committees on
Government Regulations
Public Service
Transportation

LORI A. JODOIN
LEGISLATIVE AIDE

April 22, 1999

Ms. Laura Rome
MEPA Unit
Executive Office of Environmental Affairs
100 Cambridge Street
Boston, MA 02202

RECEIVED
APR 22 1999
MEPA

Re: The Emerald Necklace Environmental Improvements Master Plan
Phase 1 Muddy River Flood Control, Water Quality and Habitat
Enhancement
EOEA #11865

Dear Ms. Rome:

I am writing to comment on the proposed Phase 1 Muddy River Flood Control, Water Quality and Habitat Enhancement of the Emerald Necklace Environmental Improvements Master Plan.

I am enthusiastic about the proposed project because of its potential to provide long overdue flood control, improve the water quality of the Muddy River, and restore the parkland in this important part of the Emerald Necklace. However, I urge consideration of the following recommendations in the development of a Master Plan EIR.

1. To avoid a repeat of the catastrophic flooding that has occurred in homes and businesses in Brookline and the Fenway and in the MBTA's Kenmore Station, priority should be given to flood control projects. [This] should include, in the following order, removal of the constrictions at the railroad bridge between Ipswich Street and the Massachusetts Turnpike; daylighting of the river from above the former Sears parking lot to Fens Pond; daylighting of the river from Fens Pond to Higginson Circle; and installation of a larger culvert at Storow Drive, where the Muddy River enters the Charles River.

2. The dewatering facilities and staging areas should be relocated to an area away from where the river is to be daylighted so as not to delay the daylighting.] 3

3. After the flood control projects are completed, selective dredging should be commenced to improve the hydraulic flow of the river and remove contaminated sediment. This should result in water quality improvement. Dredging and widening of the river should be avoided in areas where there could be substantial risk to wildlife habitat, including the Victory Gardens in the Fenway.] 4] 5

4. Landscaping that is unaffected by the flood control and water quality projects can proceed without delay. The remainder of the landscaping should wait until after these projects are completed.] 6

5. The potential impacts of phragmites removal on wildlife habitat should be analyzed fully in the Master Plan EIR. Phragmites removal should be limited to what is needed to achieve flood control and improved water quality. To the extent phragmites are removed, they should be replaced by other plantings which preserve the sightlines and noise buffer now provided by the phragmites.] 7] 8

I look forward to the development of a Master Plan EIR in accordance with these recommendations. Thank you for your consideration.

Sincerely,

Paul C Demakis

Paul C. Demakis
State Representative
8th Suffolk District



COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
ONE WINTER STREET, BOSTON, MA 02108 617-292-5500

MARGEO PAUL CELLUCCI
Governor

WANE SWIFT
Lieutenant Governor

BOB DURAND
Secretary

EDWARD P. KUNCE
Acting Commissioner

RECEIVED
APR 23 1999
MEPA

April 22, 1999

Robert Durand, Secretary
Executive Office of Environmental Affairs
Attn: MEPA Office
100 Cambridge Street - 20th floor
Boston, MA 02202
Attention: Laura Rome

RE: EOE A #11865, Muddy River
Master Plan and Phase I Project

Dear Secretary Durand:

The Department of Environmental Protection (DEP) has reviewed the Environmental Notification Form (ENF) submitted jointly by the Boston Parks and Recreation Department and Brookline Department of Public Works for the Emerald Necklace Environmental Improvements Master Plan, including the Phase I Muddy River Flood Control, Water Quality and Habitat Enhancement project (EOEA # 11865). This letter is intended to convey DEP's consolidated comments. DEP would initially like to indicate that we strongly support the efforts to address the various problems which relate to the Muddy River ecosystem, particularly as they may present solutions to the periodic flooding of adjacent neighborhoods and MBTA Green Line facilities. Staff from DEP have been working closely with a number of federal, state and local agencies and advocacy, environmental and neighborhood groups to address these various issues.

This correspondence is divided into specific sections and addresses as the major issues that relate to project aspects either falling within DEP's jurisdiction or general oversight, these issues being; (1) Wetlands Protection Act (WPA), (2) dredging and resultant sediment management, and (3) stormwater management and pollution control.

Much of the information included in the ENF was developed from a series of prior reports, including the Army Corps of Engineers (ACOE) Muddy River Feasibility Report; the Fenway Alliance Restoration and Action Plan; and the EOE A/FEMA Flood Assessment Report, each of which addresses one or more of the three major related, but potentially segmentable, problems facing the river: flooding, water quality, and parkland and landscape restoration.

Wetlands Protection Act

The subject ENF specifically addresses issues associated with the Phase I Muddy River Flood Control, Water Quality and Habitat Enhancement portion of The Emerald Necklace Environmental Improvements Master Plan. Preliminary assessments of wetland interests to be impacted by the project include; Bordering Vegetated Wetlands (BVW), Bordering Land Subject to Flooding, Land Under Water Bodies and Waterways, and Bank. Although not identified in the ENF, the Riverfront Area, as regulated under 310 CMR 10.58, should be included as an existing resource area and assessed relative to impacts from the project. A definitive delineation of wetland resource impacts, including topographical/bathymetric surveys should be undertaken to quantify the areal and linear extent of existing resources and proposed project impacts to these wetland resources should be prepared as a submittal or review document leading up to the EIR. Given the initial scope of proposed impacts from the project, the project is also likely to trigger the requirements for a Wildlife Habitat Assessment (per 310 CMR 10.60) which therefore should be included in the EIR.

As noted in the ENF (p. 12), the project proponents anticipate that a variance of the WPA will be necessary and sought per 310 CMR 10.05(10). Although a variance MAY be required for the project, it is unclear, based on the limited discussion of the project in the ENF as to which standards in the wetland regulations will require a variance. As described, some portions of the project could be characterized as one which is primarily intended to "improve the natural capacity of a resource area to protect the interests identified in M.G.L. c.131, s. 40" (e.g. flood control, pollution prevention, and protection of fisheries and wildlife habitat) Such a project purpose may in fact be allowed under the WPA, without the need for a variance, as provided in 310 CMR 10.53(4). In the exercise of this discretion, the issuing authority (i.e. conservation commission or the Department of Environmental Protection) is required to consider the magnitude of the alteration and the significance of the project site to the interests of the WPA, the availability of alternatives to the proposed activity, the extent to which the resource impacts are minimized, and the extent to which mitigation measures, including replication and restoration, are provided.

The ENF states that the projects to be implemented will address three major goals; (1) increase flood control, (2) improve water quality, and (3) enhance aquatic/riparian habitat in the Muddy River. The ENF proposes a Master Plan approach to achieving these three goals, with the understanding that the project would be reviewed under MEPA's Special Review Procedures (this specific procedural issue is discussed in detail in latter portions of this correspondence). According to the ENF, these goals would be achieved through bank-to-bank dredging of the River and removal of 171,900 cubic yards of sediments, without impact on specified wildlife habitat sites of rare species. In order to determine if an adverse impact will occur to rare species habitat, the applicant must consult with the Natural Heritage and Endangered Species Program. The EIR should include this determination.

In sum, a variance may not be required if the project is determined to have no adverse impact on rare species habitat and the project impacts can be limited to those deemed necessary for enhancing the natural capacity of the system to [improve flood control and prevention of pollution (i.e. water quality enhancements).]

Wetland Variance Criteria

In the event that adverse impacts to rare species habitat are identified and/or the project is characterized as something other than one to improve the natural capacity of the system to control flooding, the project will require a variance. In order to receive a variance, the applicant is required to show that there is an overriding public interest in the project, that no other reasonable alternative exists and that mitigation efforts will be undertaken to minimize the project impacts. In addition, as part of a variance request, the applicant is required to identify those performance standards for each resource area of the wetland regulations for which a variance is sought.

Overriding Public Interest

The overriding public interest in the project must be shown to outweigh the detriments of lost wetland resource functions. In the EIR, as part of the variance request, the applicant must document the overriding community, regional, state or national public interest of the project. Historically, wetland variances have been issued only in rare and unusual circumstances to protect public health (e.g. hazardous waste clean-up, water supply filtration, and landfill closures), promote public safety (e.g. airport safety areas, roadway improvements, and flood prevention) or improve environmental quality (e.g. resource restoration and air quality improvements). The EIR should identify the specific public interest that is being served by the project and why that interest represents an overriding public interest comparable to the interests established in previous variance decisions.

As noted in the ENF, one purpose of the project is to "enhance flood control by increasing the hydraulic capacity of the Muddy River ..." (p. 12). In order to establish the overriding public interest for this project, the EIR should include a full discussion of the historic flooding that has occurred along the Muddy River. Documentation of past flooding problems should include information regarding past flood events, flood frequency, flood damages (i.e. personal and property damage), and effects on public safety and health. In addition to documenting the public interest in the project, the EIR should quantify the extent of the flooding problem, identify watershed flood storage deficits (on a subwatershed level) and identify the storm event frequency for which the project is designed. The overriding public interest in the project should also be documented with correspondence from relevant public officials and agencies which support the purpose of the project. A clear description of the project purpose will serve to refined the scope of alternatives.

Reasonable Alternatives

The EIR should include a discussion of all the reasonable alternatives which have been considered for the present project in order to avoid wetland impacts. For those alternatives which do not meet WPA performance standards, a description should be provided in the EIR of the wetland impacts of each alternative. For those alternatives which meet WPA performance standards, an explanation should be provided as to why those alternatives are not reasonable for accomplishing the project purpose. The preferred alternative should represent the most reasonable alternative and which results in the least wetland and overall environmental impacts.

The scope of alternatives should include an analysis of "off-site" alternatives which may serve to achieve the project purpose or which will help minimize environmental impacts to the river corridor. Given the significant potential environmental impacts as described in the ENF, the EIR should include an assessment of all reasonable alternatives available for flood control. Such alternatives should include the use of stormwater control BMPs to buffer peak stormwater flow on the main stem, as well as the tributaries, of the Muddy River. Another alternative which should be considered and discussed in the EIR involves improving the hydraulic gradient between the Muddy River and the Charles River. The EIR should include an assessment of the low hydraulic gradient which exists along the Muddy River, through the Back Bay Fens, to the Charles River. Because the Charles River elevation is controlled by operations of the Charles River Dam, the EIR should include a discussion of the feasibility (i.e. potential benefits and detriments) of modifying Charles River elevation during storm events to increase discharge rates through the Muddy River.

The "on-site" alternatives referenced in the ENF include projects which will improve both water quality and water quantity. Although the ENF references an ACOE study which identified seven dredging options, the ENF proposes to achieve the project objective "through a bank-to-bank sediment dredging project" (p. 2). The EIR should include a complete and detailed discussion of the ACOE study findings and proposed options. These dredging alternatives should be considered in light of which alternative will result in fewest environmental impacts while achieving the aforementioned (and quantified) objective of the project. The wetland resource impacts of each dredge alternative should be documented in the EIR. If certain dredge alternatives are found to comply with the wetland regulations, but were not selected as the preferred alternative, the EIR should describe why the alternative is not feasible for achieving the project objective. This is particularly important in that the October 1998 Proposed Phase I Flow Improvements in the Muddy River prepared by Camp, Dresser & McKee for EOEa appears to indicate that the historic flooding problems can be addressed with far less dredging (17,000 cy versus 172,000 cy indicated in the ENF).

Mitigation

The EIR should provide a full description of the mitigation measures which are proposed for this project. The discussion of mitigation measures should detail the extent of wetlands resource impacts, the functions associated with those resources, and the mitigation measures which will minimize resource impacts and/or restore resource functions. In discussing replication of resource areas, the applicant should document how the replication effort will comply with the provisions of 310 CMR 10.55(4)(b). As part of this documentation, the EIR should also include detailed discussions as to the location, size, and methodology to be used in replicating resource areas as part of the mitigation plan.

In past variance cases, the Department has required at least 1:1 replacement for wetlands mitigation efforts which involve wetlands restoration. If proposed wetland mitigation involves wetland replication, the Department has sought 2:1 or more replacement due to the difficulty of establishing successful wetland replication sites. Depending on the final assessment of wetland impacts, the EIR should describe how and where the altered wetland resources and the associated wetland functions will be replaced and/or restored.

The ENF identifies preliminary mitigation efforts as those necessary to control the suspension of solids associated with the dredging operation. This mitigation effect includes a phased approach of dredging, use of silt curtains and booms, and monitoring of the operation. As part of the EIR, these mitigation efforts should be more fully developed and include a discussion on maintenance of the erosion control systems and contingencies for significant storm events during the construction period. The ENF also states that the "former Sears parking lot" will serve as the construction stockpiling and dewatering location. The EIR should include a description and design for the construction and dewatering areas in order to allow for a more detailed assessment of how this area may be impacted by the project. In addition, the EIR should identify and discuss alternative staging and dewatering locations in the project area. A discussion of backup alternatives to the Sears lot may prove useful in the event that the use of the Sears lot is not selected or redesigned as part of the public review process.] 26
] 27

The applicant should be advised that if the above information is not thoroughly presented as part of the EIR process, the request for this information will be required as part of the variance review process by DEP. In order to most effectively expedite the review of this project, the proponent is encouraged to submit the above-referenced information as part of the MEPA process.

Phragmite Removal/Wetlands Protection Act Compliance

A significant portion of the proposed work appears to be aimed at removing phragmite from the river and its banks. As mentioned above, in its current form this proposal would require a variance. It has been the Department's experience that large-scale efforts to remove phragmite are rarely successful due in part to lack of resources and commitment. Success depends in great part on careful removal of the phragmite, making slight changes in microtopography in order to provide optimal hydrology, planting of a variety of native species and on-going, diligent monitoring, maintenance and replanting. There are portions of the Muddy River where it appears that there are selected areas where small stands of phragmite could be successfully removed and replaced. There is also the opportunity to experiment with different control strategies to evaluate their effectiveness. If phragmite removal is to remain a realistic goal, the Department recommends that the proponent examine the various phragmite stands and consider the likelihood of success in each area based on the surrounding habitat, vegetation and hydrology and the costs of removal, replanting and on-going maintenance. The EIR must contain a detailed discussion that 1) identifies the areas for phragmite removal and replacement; 2) the criteria used to choose the areas; 3) a description of how the work will be undertaken in each area; 4) the species to be planted in each area; 5) the on-going monitoring and maintenance, including replanting, that will be undertaken and; 6) the party, or parties, that will be responsible for carrying out all phases of the work.] 28
] 29

All work in wetland resource areas, including but not limited to dredging, removal/replanting of phragmite and work on Banks would need to be overseen by a wetlands professional with experience in restoration of wetlands and riparian areas.] 30

Bank Alteration

The ENF states that there will be impacts to 5.8 acres of Bank as a result of dredging. Under the Wetlands Regulations, Bank impacts should be described on a linear basis, not as acreage. Proposed alterations to Bank should be described in detail in terms of each proposed activity.] 31

the related project goals. It is not clear to DEP why alterations to the Banks of the River is required in order to meet the goals of the project.

Types of Wetland Impacts

The EIR should distinguish between the types of impacts within each wetland resource area. For instance, alteration of BVW for the purposes of enhancement under 310 CMR 10.53(4) should be tallied separately from alteration of BVW due to dredging and the resulting conversion of BVW to Land Under Water.

Dredging

Based on observations made during an inspection of the River in the spring of 1999 and on a review of the above-referenced CDM report ("Proposed Phase I Flow Improvements in the Muddy River"), it is the Department's opinion that the magnitude of dredging currently proposed is excessive and will be difficult to justify.

Project Goals

Each of the main project goals should be clearly defined so that the activities and impacts related to each one may be described and understood.

Due to the multi-purpose nature of this project the proponent must specify exactly what purpose is driving each proposed activity. Project goals should be prioritized when a particular activity has multiple purposes. For instance, if the goal of dredging a particular segment of the river is primarily intended to remove phragmite, while improvements to flood control are a secondary benefit, both goals should be clearly articulated and supported.

Dredging and Sediment Management

Dredging

It is expected that the project would consider the dredging impacts on water quality and would choose to use equipment that would minimize these impacts. Drag line dredging in muck is apt to unnecessarily resuspend the sediments and cause turbidity more than other equipment. The environmental bucket is designed for deep water, but there may be some bucket modifications that could maximize capture of sediment while minimizing the volume of excess water. This would be appropriate to minimize water quality degradation. Proposed use of track-mounted excavators, if they have open buckets, is not as beneficial for preserving water quality. Hydraulic dredging may be inappropriate given the constraints of the surrounding area; however, Hardy Pond in Waltham is being dredged using hydraulic equipment coupled with mechanical filter press dewatering and use of a flocculation agent to increase solids content and ease of handling. This is being done with very little space adjacent to the Pond for these operations. Eddy Pump dredging has yet to be done in Massachusetts to our knowledge, but the technology appears to be promising in that sediment with high water content can be dredged with less capture of overlying water, according to the claims of the manufacturer and assuming that experienced operators are in control of the machinery.

We are concerned about the statement that "overdredging" will be performed in some areas. The specific purpose of this is unclear and should be clarified. It is DEP's understanding that a clay liner may have been put in place when the river system was designed and it is likely needed to maintain the hydrology of the area.] 36

Use of silt curtains with windows was mentioned as a way of controlling turbidity from the dredging operation. These are commonly used when dredging tidal waters that are deep (twenty or more feet) and the expected turbidity from dredging is mostly located from the mid-water column to the bottom. In the Muddy River, the use of windows would be counter-productive because the water is shallow and turbidity would be distributed throughout the water column.] 37

The proponent will need to assess whether pre-dredging "debris removal" will be necessary to allow for certain types of dredging operations to be performed. This is particularly important when use of the "environmental bucket" is proposed.] 38

Sediment Classification and Management

General Comments

(1) Based upon DEP's review of the existing sediment containment data and knowledge of the historic discharges of large volumes of wastewater to the Muddy River, the management of the 172,000 plus (potentially up to 260,000) cubic yards of sediment discussed in the report will be a critical aspect of the project and will need to be fully and carefully addressed in the EIR. The significant issues include the following.] 39

(2) Proponent will need to fully characterize and classify the sediment in order to identify allowable/feasible disposal options. Information currently available to DEP indicates that the sediment in the culverted areas may have substantially different and/or higher levels of contamination than those in the open river areas (e.g. TCLP-Lead, Reactive Cyanide, etc.) Therefore, there may be specific areas of the river where sediment will require pre-treatment and/or disposal at facilities which are specifically designed to manage particular types and/or concentrations of contaminated soil/sediment (e.g. TCLP-Lead or TSCA PCB materials). Since these specialized facilities will have significantly higher costs than a conventional lined landfill, it will be important to attempt to find and segregate the more problematic sediment and manage them separately. This situation should be addressed further in the EIR.] 40
] 41
] 42

(3) Sediment samples obtained in 1992 by Boston Water and Sewer Commission from various culverts/ manholes along the river indicate that of the nine samples taken, five exceeded the TCLP-Lead hazardous waste criteria (some of these same samples also showed excessive levels of Reactive Cyanide, which would also cause those materials to be a hazardous waste under federal and state standards). The most recent round of sampling by USGS did NOT indicate any TCLP exceedances, but sampling was only performed in the open areas of the river. If the final proposal includes the removal of sediment from any of the culverts, this issue will need to be considered in the specific dredging, stockpiling, sampling and disposal procedures.] 43

(4) Prior sampling has also indicated periodic exceedances of Reactive Sulfides, but due to fiscal constraints Reactivity tests weren't performed in the most recent USGS sampling program. At this point DEP is assuming that all sediment could be Sulfide Reactive and will require] 44

compliance with DEP's 1997 Interim Management Procedures for Upland Reuse/Disposal of Contaminated Sediments, Reactive Sediments (attachment No. 1) that mandates lime treatment; an action which would almost certainly be required anyway to control odors/degradation from the Muddy River sediment.

(5) The above actions could result in up to 3 or 4 different categories of sediment which would require separate handling and management, a situation which could significantly complicate the siting and operation of unloading, dewatering, treatment and temporary stockpiling activities. Based upon a recent site walkover performed by DEP staff, obtaining an area(s) in close proximity to the dredging zones that would be able to support such project needs will be difficult and the proponent should prioritize this activity. Therefore, these issues will need to be discussed and evaluated in the EIR.

Specific Comments

(1) ENF assumes that all, or at least most of, the sediments will go to a DEP-approved (e.g. In-State) Lined Landfills. This may or may not be possible in that there are currently very few in-state landfills that are either approved to receive this type of material or would be interested in accepting it. DEP strongly recommends that the proponent contact lined landfills located in other nearby states to discuss potential sediment disposal. The EIR must address this issue.

(2) The document currently indicates that a portion of the sediment may fail the TCLP-Lead Hazardous Waste threshold, but there are no similar discussions relative to potential PCB, TSCA or Reactive Sulfide or Cyanide which could themselves result in a number of additional problems for sediment management. The report does state that the materials will likely require mixing with lime, and this is one way to both control odors (as discussed in the ENF) and solve the likely Sulfide Reactivity problem, but it is unclear the effect of lime addition on Reactive Cyanide sediments and this will need to be researched by the proponent. The listing of analytical requirements in the ENF will need to be expanded to deal with Reactive Sulfides/Cyanides and PCBs.

(3) An option for managing TCLP-Lead sediment is to treat them to remove the characteristic prior to reuse/disposal at an in-state or out-of-state lined landfill. Section 8.2 of DEP's Reuse and Disposal of Contaminated Soils at Mass. Landfills, Policy # COMM-97-001, describes the requirements for such an option, the following being a key section of that document.

8.2 Reuse and Disposal of Treated TCLP-Lead Soil at Lined Landfills

Treated TCLP-Lead Soil (see Section 3.0) may be reused or disposed at Massachusetts lined landfills provided that it is managed consistent with the acceptance criteria, containment levels, and the operational and procedural guidelines of this Policy and 310 CMR 19.000. The Treated TCLP-Lead Soil also shall comply with the characterization (testing, etc.), procedural and treatment requirements of 310 CMR 30.000 and the provisions of the RCRA Hazardous Waste Regulations, Title 40 Code of Federal Regulations Parts 260 through 271. This includes, but is not limited to, the treatment of standards specified in Title 40 Code of Federal Regulations Part 268 Subpart D - Treatment Standards.

- (4) If any of the sediment ends up with a Characteristic Hazardous Waste Exceedance and the proponent proposes to treat the material at the site of generation to "remove the hazardous characteristic" (has been done a number of times for Central Artery/Tunnel (CA/T) TCLP-Lead excavate), the treated materials must also meet the new Phase IV Land Disposal Restrictions (LDRs) which, depending on the "other contaminants" in the sediments to be treated, might require a second round of treatment at an off-site facility such as a thermal processing facility. 48
- (5) There is no discussion in the permits section regarding the need for a Special Waste Determination, which would be necessary to obtain DEP approval for in-state disposal of treated sediment. This is a key permitting action, as it includes requirements for local Board of Health and public review/comment. 49
- (6) Prior sampling has showed total PCBs in the 2.3 to 2.5 mg/kg range. These levels of PCBs could be a problem for landfill reuse or disposal, at least in-state. DEP currently uses 2 mg/kg as a general guide for REUSE, and DEP can potentially allow higher concentrations for disposal, but historically most in-state landfills will not accept materials with greater concentrations of PCBs. The federal TSCA Program standards are more stringent and TSCA pre-empts state standards for enforcement purposes, so the proponent should discuss this issue with Kim Tisa @ EPA Region I. 50
- (7) TPH levels in all sampling programs are very high; in the 10,000 to 30,000 mg/kg range. (DEP lined landfill reuse criteria being 5,000 mg/kg). 51
- (8) The ENF correctly indicates that a significant dewatering/processing site will be needed and also that additional laydown and vehicle access areas will also be necessary. As indicated in General Comment (5) above, this is an extremely important issue which will need to be assessed in detail in the EIR.
- (9) The report also correctly states that post-dredging (after lime addition) "supplemental confirmatory sampling" will be necessary to be able to verify materials are not exceeding a Hazardous Waste characteristic and/or meeting disposal criteria. This requirement is often overlooked and can be a fatal mistake in project planning. DEP will work with the project proponent to define the scope and nature of this activity. 52
- (10) It is unclear if, and when, the dredging of the Franklin Park Area would take place. It is discussed in the report but the 172,000 c.y. of sediment figure which is used throughout the ENF does not include the 90,000 c.y. from the Franklin Park Area. This needs to be clarified. 53
- (11) The discussion on pages 5-9 and 5-10 relative to "hazardous levels of lead" and disposal options is confusing and may not be accurate. Discussion with DEP on this issue should take place. The Permit Section discusses the need for a NPDES Permit for the dredging backdrainage/dewatering. DEP attempts to approve this activity as an element of its 401 WQC. The technical requirements are similar, but it removes the need for obtaining an additional permit; one that could include a significant timeline problem. This should be discussed among EPA and DEP and the project proponent. 54
55

Stormwater Management and Pollution Prevention

As considerable sedimentation and pollution of the Muddy River has historically occurred through existing drainage and stormwater outfalls, the proponent should include a drainage and stormwater management plan to ensure that the benefits of the dredging project will not be diminished by existing or future pollution sources. In various sections of the ENF, the proponent has indicated that enhanced best management practices (BMPs) will be pursued and structural controls at key locations will be considered. DEP agrees that these actions will be critical in achieving and maintaining water quality improvements in the Muddy River Basin, and suggests that these activities be identified in a specific stormwater and drainage management plan conforming to the March 1997 DEP Stormwater Management Standards and Technical Guidance which includes, at a minimum, the following elements:

Assess Existing Pollution Prevention/Stormwater Management Practices

As indicated in the ENF, the Boston Parks and Recreation Department should work with the Boston Water and Sewer Commission, the Brookline DPW, the Newton DPW, and the Metropolitan District Commission to review the existing pollution control and stormwater management practices and explore opportunities to work together to enhance BMP Programs in the Muddy River Basin.

Assess the Need for In-Line and Off-Line Structural Controls at Key Drain Locations

The Plan should evaluate the need for structural controls at the major drainage locations in the Muddy River Basin, including the Village Brook Drain, the Tannery Brook Drain, and the Longwood Drain. These drains have been shown to contribute significant sediment and pollutant loads into the Muddy River and end-of-pipe controls are anticipated to be necessary (along with an aggressive BMP program) to minimize future pollutant discharges to Leverett Pond and the Muddy River. The Plan should identify the range of possible structural BMPs, and should consider siting constraints, costs, and operation and maintenance requirements.

Construction Impact Mitigation

The Plan should identify and incorporate construction site controls to minimize pollution from site runoff. The Proponent should develop a plan for managing runoff from potential sources of pollution associated with vehicle/equipment access and maintenance areas; truck washdown areas; sediment stockpiling areas; and other areas where the handling and processing of dredged materials may allow for pollution to enter the river in runoff. The proponent should consider as part of the Plan detention basins which include a polymer feed system to enhance settling of fine silts and clays, as has been used extensively in the Central Artery/Tunnel project. DEP will work with the proponent to develop strategies to manage on-site stormwater runoff.

In addition, runoff from areas of the site where lime addition is performed and treated sediment are stockpiled will likely require active pH control to reduce the elevated pH from the lime. The CA/T Project is using carbon dioxide pH control systems which have been found to be very successful, while minimizing the potential for "over adjusting" the pH and lowering it too far. DEP staff will be available to work with the proponent and contractor.

Proposed MEPA Process for Special Review Procedure

The ENF recommends to MEPA that the proponents be allowed to use the new Area-Wide Review procedures as delineated in the MEPA Special Review Procedures. While DEP believes that this project presents exactly the kinds of issues that were considered during the development of the new Special Review Procedures, we do not believe that the most effective way to address them is by using the Area-Wide Review Procedure as suggested by the proponent. While Area-Wide Review, as it is described in 301 CMR 11.09(4)(b) has the flexibility to address some of the challenges presented by this project, it does not provide the mechanisms for coordination, technical and citizen input, phased scheduling, and consolidated permit review that will be critical to the success of this project.

This project raises issues for virtually every environmental media; surface water; sediment; dredged materials, soil; air quality; as well as management of contaminated media. The invested range of interests and interest groups include federal, state, public interest groups, neighborhood associations, private interests, and the general public. The timing, staging, and phasing of various aspects of the project will be critical to its success or failure, and the technical and management challenges are formidable. Finally, the project is located in a mature, built-up urban area served by some of Boston's busiest traffic corridors and in direct proximity to some of Boston's most historic and busiest institutions, including Fenway Park, Simmons College, and several world-class hospitals.

All of these considerations require a form of MEPA review that can provide the flexible review periods, review of documents other than or in addition to the ENF and the EIR, phasing, coordination of multiple reviewing parties and review processes, and the early involvement and input best obtained from both a Citizens' Advisory Committee (CAC) and a Pre-Application Review Committee (PRC).

What DEP staff recommends is using the Special Review Procedures, but relying upon 301 CMR 11.09(4)(d), which affords the Secretary the ability to craft a Special Review Procedure that is specific to any particular project, without having to fit an unusual project, such as this one, into Programmatic Review, Area-Wide Review, or Coordinated Review. The new MEPA Special Review Procedures offer a much wider range of possibilities than merely a selection of three possible processes

This project has elements that are served by both the Area-Wide Review process and the Coordinated Review process, but is complicated by so many disparate elements that the ideal Special Review Procedure would have to combine components of both plus add an element of

flexibility for public review and comment that cannot be crafted through applying just one of these procedures¹.

Specific Comments:

(1) Special Review Procedure

DEP staff recommend that the Secretary establish a Project-Specific, Special Review Procedure under 301 CMR 11.09(4)(d), as follows.

1. A Special Review Procedure (SRP) consisting of two distinct phases would be established by the Secretary and published in the Monitor as part of the Secretary's ENF Certificate. The Certificate would explain that a two-phase SRP was being adopted and would summarize the elements of the phases; see Attachment 1 - Model Certificate.

Phase One would require establishing the CAC and a PRC, notice of which would be contemporaneous with the ENF Certificate; see Attachment 2 - Model Notice. The CAC and PRC would develop recommendations for the Secretary as to the overall Project, particularly Project phasing, coordinated agency review and permitting processes, coordinated public review and comment periods, consolidated project management by the proponent, and Project Scope.

¹(4) Eligible Projects. The four forms of SRP are applicable to different kinds of projects, with differing needs:

(4)(b) Area-Wide Review. Designed to address large areas or several sites, such as master plans, watersheds, roadway/utility corridors, redevelopment areas, major public facilities, large phased developments. This SRP is intended to assist a Proponent in establishing a future baseline in relation to which a project and its alternatives can be described and analyzed and its potential environmental impacts and mitigation measures can be assessed.

(4)(c) Coordinated Review. Designed to coordinate/consolidate MEPA review with other environmental or developmental review and permitting processes, such as where a project requires federal and state or state/state agency permitting, needs to establish meaningful opportunities for public review, analyzes alternatives, and considers cumulative impacts. This SRP is intended to assist the Secretary in adopting scoping decisions by agencies, deferring to such decisions, issuing joint scoping decisions or accepting review documents prepared in accordance with the statutes and regulations of the agency as the full or partial equivalent of an ENF, EIR, or other review document.

(4)(d) Other Special Review. As designed by the Secretary.

Phase Two would be used by the proponent, the CAC and the PRC to assist the Secretary in developing the Scoping requirements, leading to a Final EIR as the final review document.

2. Notice and Schedule. The Secretary's ENF Certificate establishing the SRP would not include the elements of the Scope, which will be developed during Phase Two of the SRP. The ENF Certificate would establish the SRP, include a finding that the Scope was required, and provide a separate Notice and Comment period for the scoping requirements after development during Phase Two.

At the close of Phase Two, a Notice of Scoping Requirements and any Proposed Modifications to the SRP would be published in the Monitor in accordance with 301 CMR 11.09(2) and 301 CMR 11.15.

This process would provide the Secretary and the proponent with the input of the CAC and the PRC at the most efficient and valuable point: the development of the scoping requirements. It would establish unified public comment periods, and would allow for the submission of a single EIR as the final review document.

Other Comments

Project Phasing/MEPA Process

Phasing of the project should be specifically addressed in the EIR Scope. Sequence of work activities within each phase should also be addressed.] 65

Typically, permitting under 404 and 401 requires a "single and complete" project-wide filing. This would require that all wetland impacts (state and federal) be identified and mitigated as part of a single application and permit. Therefore, wetland impacts resulting from future phases of work (such as landscaping or historical renovations) must be considered in the applications for these permits, and therefore, addressed in the initial phase of this project. DEP recommends that the project proponent discuss this issue with ACOE staff.] 66

DEP also recommends that all of the items in Phases II and III should be reviewed and discussed, at least conceptually, relative to the benefits and/or need to incorporate particular aspects into Phase I. An example is traffic circulation, as it might be necessary to implement certain traffic improvements to allow for construction period traffic impacts to be adequately mitigated.] 67

Construction Period Air Quality Impacts.

As MEPA is aware, last year the Central Artery Project, in cooperation with EPA-Region I, EOE, Northeast States for Coordinated Air Use Management (NESCAUM) and DEP, with assistance from the Manufacturers of Emission Control Association (MECA), launched the Clean Air Construction Initiative. This program was the first in the nation to retrofit existing heavy construction equipment used at major public works/infrastructure projects with pollution control devices targeted at reducing diesel emissions and, consequently, reducing the localized adverse health impacts and nuisance conditions they may create.

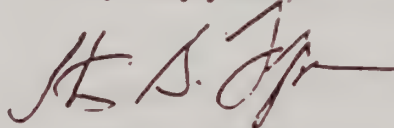
In addition to implementation of diesel retrofit activities for the CA/T Project, DEP is actively discussing similar mitigation actions for one or more projects being proposed by MBTA and MWRA and is planning to initiate discussions relative to a number of other large construction projects within the Boston Area.

DEP believes that the implementation of diesel emission controls for the on-site heavy construction equipment for the Muddy River project, particularly equipment that will be operating on the dewatering and stockpiling area(s) but possibly also the dump trucks to be used to haul the sediment to and from these locations, can significantly mitigate localized adverse air quality impacts at nearby sensitive receptors and recommends that MEPA include in its EIR scope the requirement that such actions be assessed.

Staff from DEP will actively participate on a Pre-Application Review Committee to assist the project proponents and MEPA in the development of the Special Review Procedures and program elements.

Feel free to contact either Rachel Freed [(978) 661- 7783] or myself [(617) 292-5698] if you have any questions or comments regarding this correspondence or related issues.

Very truly yours,



Steven G. Lipman, P.E.
Special Projects Coordinator
Commissioner's Office

cc: Justine P. Liff,
Frances Beatty, and Tim Smith (Boston Parks and Recreation)
Peter Ditto, John Woodward, Stephen Burrington, and Erin Chute (Brookline)
Rich McGuinness (Boston Conservation Commission)
Samantha Overton (MDC)
Henry Wolsey (Natural Heritage and Endangered Species Program)
U.S. Army Corps of Engineers, Regulatory Division
Mark Smith (EOEA)
Richard Thibedeau and Lester Lewis (DEM)
Jane Mead and Deerin Babb-Brott (CZM)
Arleen O'Donnell, Lois Bruinooge, Mike Stroman, Bill Gaughan,
Madeline Morris, Jim Sprague, Judy Perry, Dave Murphy, David Shakespeare,
John Carrigan, Kevin Brander, Rachel Freed (DEP)

Attachment 1

[MODEL]
 CERTIFICATE OF THE SECRETARY OF ENVIRONMENTAL AFFAIRS
 ESTABLISHING
 SPECIAL REVIEW PROCEDURE

PROJECT NAME:
 PROJECT LOCATION:
 EOE NUMBER:
 PROJECT PROPONENT:
 DATE NOTICED IN THE MONITOR:

Pursuant to the Massachusetts Environmental Policy Act (M.G.L. c. 30 §§ 61 - 62H) and Section 11.09 of the MEPA regulations (301 CMR 11.00) I hereby establish a Special Review Procedure pursuant to 301 CMR 11.09(4)(d).

Project Description

[Standard Descriptive Language]

Categorical Inclusion

I determine that the Special Review Procedure for this Project call for the preparation of an Environmental Impact Report (EIR) as the final review document, in accordance with 301 CMR 11.09(1).

Jurisdiction

[Standard Descriptive Language]

Permits

[Identify permits/permitting agencies and authorities and]

Specific permitting timelines for submittal of applications and public notice, review and comment will be set forth in Phase Two of the Special Review Procedure.

Special Review Procedure

1. The following Special Review Procedure is established in accordance with 301 CMR 11.09(4)(d) which provides that the Secretary may establish a Special Review Procedure for any other Project not otherwise established under Programmatic Review, Area-Wide Review, or Coordinated Review.

2. This Project presents potential environmental impacts, coordination issues, and permitting issues that are best served by combining the components of an Area-Wide Review with a Coordinated Review.

and alternatives may be described and analyzed and the potential environmental impacts and mitigation measures may be assessed at the most efficacious times and with the assistance of the Citizens Advisory Committee and the Pre-Application Review Committee.

4. The Special Review Procedure will assist the Secretary in adopting and/or deferring scoping decisions by the participating agencies and in identifying and accepting review documents prepared in accordance with the statutes and regulations of the participating agencies.

5. The Special Review Procedure will be implemented in two phases. In order to implement Phase One, I am establishing a Citizens Advisory Committee (CAC) for the Project in accordance with 301 CMR 11.09(3) and a Pre-Application Review Committee (PRC).

6. In Phase One, the proponent and the participating agencies shall, with the input and participation of the CAC and the PRC, develop and submit to the Secretary the following:

- (1) Summary and description of Potential Environmental Impacts;
- (2) Summary and description of alternatives;
- (3) Summary and description of mitigation measures;
- (4) Proposed Project Scope;
- (5) Proposed schedule for consultants' submission of scopes-of work;
- (6) Proposed schedule for coordinated/consolidated agency(ies) permit reviews;
- (7) Proposed schedule for public review and comment;
- (8) Proposed review documents prior to submission of the final EIR.

7. In Phase Two, the CAC and the PRC shall assist the Secretary in developing scoping requirements, including providing recommendations as to adopting joint scoping decisions and/or deferring scoping decisions, in full or in part, to participating agencies, in order to prepare and submit the Final Environmental Impact Report as the final review document.

8. At the completion of Phase Two, a notice of Scoping Requirements and proposed Modifications to the Special Review Procedure shall be prepared and published in the Monitor in accordance with the provisions of 301 CMR 11.15.

9. I find that this Special Review Procedure serves the purposes of MEPA, including but not limited to providing meaningful opportunities for public review, analysis of alternatives, and full consideration of cumulative environmental impacts.

Based on these findings, it is my judgment that the Special Review procedure I have established for the Project is within the scope of authority and best serves the general purpose of MEPA and 301 CMR 11.00.

Attachment 2
[MODEL]
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS

PUBLIC NOTICE

PROJECT NAME:
PROJECT LOCATION:
EOEA NUMBER:
PROJECT PROPONENT:
DATE NOTICED IN THE MONITOR:

Notice is hereby given that the Executive Office of Environmental Affairs, MEPA Unit, acting in accordance with the provisions of the Massachusetts Environmental Policy Act (M.G.L. c. 30 §§ 61 - 62H) and Sections 11.09 and 11.15 of the MEPA regulations (301 CMR 11.00) has established a Special Review Procedure for the above-referenced Project in the Certificate of the Secretary published with this Notice.

Nominations for ten (10) Persons to serve on a Citizens Advisory Committee established by the Special Review Procedure are herein solicited.

Eligible Persons include those individuals and entities whose interests are affected by the Project, including neighbors, neighborhood associations, ad-hoc committees, business or non-profit organizations, and representative(s) of federal, state, and local government entities.

The role of the Citizens Advisory Committee is set forth in the Secretary's Certificate establishing the Special Review Procedure.

This solicitation period will extend until [date]. Interested Persons may submit a written statement of interest to [contact].

A copy of the ENF and the background information will be available for inspection at [place and time], contact [name and telephone number].



COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
ONE WINTER STREET, BOSTON, MA 02108 617-292-5500

WILLIAM F. WELD
Governor

ARGEO PAUL CELLUCCI
Lt. Governor

TRUDY COXE
Secretary

DAVID B. STRUHS
Commissioner

Interim Management Procedures for Upland
Reuse/Disposal of Contaminated Marine Dredged Sediments

Sulfide Reactivity Considerations

This document has been developed by the Department of Environmental Protection (DEP), in consultation with the Mass. Office of Coastal Zone Management, to provide guidance to project proponents, the environmental consulting community and interested stakeholders relative to upland reuse/disposal of contaminated marine sediments. Specifically, the document relates to the control of sulfide reactivity as defined under existing federal and state statutes, regulations and guidelines; but also deals with nuisance odor conditions often associated with marine sediments.

Regulatory and Background Discussion

Upland reuse/disposal of dredged sediments are regulated by DEP under the statutory authority of c.21 s.26-53 and c.21A s.14 and regulations at 314 CMR 9.00, Certification for Dredging, Dredged Material Disposal and Filling in Waters.

If not properly managed, when reused/disposed in upland areas, contaminated sediments, particularly those from marine waters, can result in localized adverse impacts due to generation and release of hydrogen sulfide to the ambient air. Such conditions could then result in violations of the Massachusetts Clean Air Act at c.111 s.142 A-I and its regulations at 310 CMR 7.00, and/or the Massachusetts Hazardous Waste Management Act, c.21C, and its regulations at 310 CMR 30.000. The intent of these procedures is to devise a strategy to minimize the potential for violation of either of these statutes and regulations.

Even though the sulfides in marine sediments are, in large part, due to natural conditions (salt water environment and anaerobic degradation of organic materials), contaminated sediments removed from the marine aquatic environment, particularly if subjected to lower pH conditions, can result in the release of hydrogen sulfide, such situations having occurred at some solid waste landfills where contaminated marine sediments were disposed of, or used as part of the covering/capping process, resulting in off-site nuisance odor complaints, concerns about adverse impacts to landfill workers applying the sediments, and the potential generation of toxic gases. Based upon this, 310 CMR 30.124(1)(e) and 30.302(3)(b) (quoted below) could become applicable to the contaminated marine sediments.

The following are pertinent excerpts from DEP's Hazardous Waste Regulations at 310 CMR 30.000 which relate to this issue.

"30.124: Reactivity

(1) A waste is a hazardous waste if a representative sample of the waste has any of the following properties:

(e) It is cyanide or sulfide bearing waste which, when exposed to a pH of between 2 and 12.5, can generate toxic gases, vapors or fumes in a quantity sufficient to present a danger to public health, safety, or welfare, or to the environment..."

(2) The proponent should develop a specific procedure for handling of these marine sediments, including lime storage and feed procedures, and lime application. If dry lime is to be utilized, the plan should include procedures for dust control measures. Plan should consider equipment details, application and pumping rates, equipment sizing information, and all other procedures and information to fully describe the plan for controlling hydrogen sulfide gas generation and release. The plan/procedures need not be submitted to DEP unless specifically required, but should be maintained at the project site.

(3) Treat marine sediments with lime as soon as possible and practical upon their removal from the aquatic environment.

(4) Generation of hydrogen sulfide gas is likely to occur upon disturbance and exposure of the soft sediment material to the atmosphere. Therefore, every effort should be made to minimize disturbance of the sediments and to limit exposure to the ambient air and specific storage procedures should be developed to accomplish these goals.

(5) A Hazardous Materials Health and Safety Plan ("Plan") should be developed and all work should be performed in accordance with that Plan. The contaminated sediments should be treated to control hydrogen sulfide levels in the air below action levels for workers and off-site receptors. In the event that action levels are exceeded, all necessary contingency measures should be implemented. In the event that these measures do not reduce the hydrogen sulfide below applicable Action Levels, operations should cease until such time that hydrogen sulfide levels can be properly controlled.

(6) A Certified Industrial Hygienist (CIH) should be retained who will be responsible for establishing air monitoring strategies and protocols (as necessary) to characterize and quantify any airborne release and transport of contaminants during dredging, treatment, and stockpiling of the sediments. These strategies and protocols should address appropriate air monitoring for volatile organic compounds (if necessary) and for hydrogen sulfide gas and odors during dredging, processing, stockpiling and transportation.

(7) Action levels for worker health and safety should be based upon information published by the American Conference of Governmental Industrial Hygienists (ACGIH), the Occupational Safety and Health Administration (OSHA), and the United States Environmental Protection Agency (USEPA). Action levels should be based upon established Permissible OSHA Exposure Limit and ACGIH Threshold Limit Values.

(8) Depending on the location of the dredging and processing operations, fence-line monitoring for hydrogen sulfide may be necessary. The need for such monitoring should be determined by the CIH and/or Environmental Consultant. If deemed to be necessary, an Air Monitoring Plan should be prepared and implemented to ensure that fence-line concentrations of hydrogen sulfide do not exceed DEP's Threshold Effects Level (TEL) of $0.9 \mu\text{g}/\text{m}^3$ (daily limit). If this concentration cannot be met, then additional mitigation measures should be immediately implemented, or all further work stopped until revised procedures can be developed/implemented to ensure that fence-line concentrations of hydrogen sulfide are consistently maintained below the TEL. The potential for off-site odor impacts due to the very low H_2S odor threshold of 0.47 ppb should also be taken into consideration, and modify project operations such that off-site nuisance conditions are eliminated.

(9) If the dredging proponent or contractor believes that his/her dredging project should not be subject to all, or specific elements, of these Procedures, he/she may request from DEP a waiver of such provisions. Any such waiver request must include the specific basis for the elements proposed to be waived.

These requirements apply to the project proponent and his/her contractor performing the actual activities.

(10) Failure to fully implement the requirements of this document, particularly items (5) and (8), may result in DEP determining that the materials be managed as a hazardous waste under 310 CMR 30.124(1)(e).

Date Issued

20 Feb 1997

Issuing Authority

Edmund P. Kenna

SGL/yglina/ a1:13-dec.ver

"30.302: Determination of Whether a Waste is Hazardous

Any person who generates a waste shall determine if that waste is a hazardous waste, as identified or otherwise described in 310 CMR 30.100, as follows:

- (1) First, determine whether his waste is excluded from regulation pursuant to 310 CMR 30.104.
- (2) Next, determine if the waste is listed as a hazardous waste in 310 CMR 30.130 through 30.136.
- (3) If the waste is not listed as a hazardous waste in 310 CMR 30.130 through 30.136, determine whether the waste is hazardous waste pursuant to 310 CMR 30.120 through 30.125 by doing either of the following:
 - (a) Testing the waste according to the methods set forth in 310 CMR 30.151 through 30.156 or according to an equivalent method approved by the Administrator of EPA pursuant to 40 CFR Section 260.21 and by the Department.
 - (b) Applying knowledge of the hazardous characteristics of the waste in light of the materials or the process used.

Hazard Determination Procedures

• In 1985 EPA issued guidance for determining whether sulfide bearing waste could potentially result in adverse health or safety impacts to workers managing such wastes. Using a conservative assessment process EPA found that a waste would need to have total reactive sulfides greater than 500 mg/Kg before it would be considered a potential hazardous waste. Therefore, the initial action which a project proponent proposing upland reuse/disposal of contaminated marine sediments should take, is developing and performing a representative sampling program. If the results show that the sediments do not exceed the 500 mg/Kg concentration guideline, then the sediments would not be considered to be sulfide reactive and therefore would not be characteristically a hazardous waste due to Reactivity. If the 500 mg/Kg concentration threshold is exceeded, further review will be required before DEP will approve upland reuse/disposal, and/or specific management procedures that must be utilized.

Discussion of Interim Management Procedures

The following is a discussion and description of a tiered procedure that DEP believes should be used to address the reactivity issue. This approach has been developed in a fashion intended to minimize the cost and implementation time for project proponents to show compliance with the applicable program requirement. Even though the procedures described below are divided into a three-tier process, the project proponent may enter the process at any tier.

Tiered Analysis Procedures

Tier I

Analyze the sediments for total sulfides and if sulfides are less than 500 mg/kg no further action is necessary. If 500 mg/kg threshold is exceeded, go to Tier II analysis.

Tier II

Analyze the sediments for sulfide reactivity as delineated in EPA's 1985 Guidance and according to the methods in Sections 7.3.3.2 and 7.3.4.2, Chapter Seven, Volume One, Section C of "Test Methods for Evaluating Solid Waste", USEPA, SW-846, Third Edition, November, 1986. If the 500 mg/kg suggested regulatory limit is not exceeded, again, no further action would be necessary. If the limit is exceeded, the project proponent should implement relevant elements of the following Procedures.

Tier III

Interim Management Procedures Background/Introduction

3

Project proponents are encouraged to follow these Interim Management Procedures when dealing with contaminated marine sediments proposed for upland reuse/disposal which fail Tier I and II Reactive Sulfide testing, or if the proponent decides not to perform such testing. It is important to understand that the actions included in these Procedures were developed to deal with sediment management issues beyond those just related to Sulfide Reactivity, therefore even if the Tiered analysis does not indicate possible Sulfide Reactivity, some or all of the actions included in the Procedures may be useful, or necessary, to allow for proper upland reuse/disposal.

Because some types of adverse impacts (often limited to nuisance odor conditions) can occur during upland reuse/disposal of contaminated marine sediments, DEP expects to incorporate these procedures into its Comprehensive Dredging Regulations, currently under development. In the meantime DEP will be encouraging the use of these procedures on a case-by-case basis as part of project permitting under s.401 Water Quality Certification by the Division of Wetlands and Waterways Regulation and/or Special Waste Determinations by the Division of Solid Waste Management.

The basic element of these Procedures is the incorporation of lime and/or similar materials (such as kiln dust) into the marine sediments¹ to raise the pH of the sediments proposed for upland reuse/disposal. This action will control anaerobic decomposition, thereby minimizing the production and subsequent release of hydrogen sulfide to the environment. This procedure will also have the added benefits of reducing some potential pathogens² and/or other types of bacteria and also aid in increasing the solids content of the sediments, allowing them to be transported (without substantial amounts of free water forming), and meeting the "Paint Filter" test required for incorporation into a solid waste landfill.

It is DEP's belief that if the Interim Management Procedures described in this document are fully implemented, the production and release of hydrogen sulfide, at levels which present a "...danger to public health, safety, or welfare, or to the environment", are unlikely to occur, and the sediments would not be considered a hazardous waste due to Reactivity as described in 310 CMR 30.302 and 30.124.

Procedures

DEP is currently developing Comprehensive Dredging Regulations but does not anticipate promulgation until early 1999. DEP does intend to develop and issue Interim Dredging Guidelines by December 31, 1997, which will be used for a year to assess their effectiveness and then revised as deemed to be necessary and issued as Regulations. This guidance document is an expedited element of those Interim Dredging Guidelines, and will also be assessed and modified as necessary.

(1) The marine sediments should be thoroughly mixed with lime (or material with similar properties) to raise and maintain (at least until the sediments are delivered to the disposal area) the pH to between 9.0 and 12.0 (pH should not exceed 12.5, which is the RCRA hazardous waste corrosivity threshold). Adequate blending of the sediments and lime is critical to ensuring consistent pH increase of the sediment.

¹ The addition of these absorbents for purposes of making the sediments more amenable for disposal is not considered "treatment" and is consistent with the allowable actions at 310 CMR 30.603(1)(a).

² If it is determined by the project proponent, DEP or another entity having jurisdiction over the upland reuse/disposal, that the sediments must be treated to reduce pathogens to the point where they comply with EPA's sewage sludge "Processes to Significantly Reduce Pathogens", sufficient lime would be needed to raise and maintain the pH to 12.0 for 2 hours. Such a requirement is not typically necessary to allow for reuse/disposal in a landfill.



Division of Fisheries & Wildlife

Wayne F. MacCallum, Director

February 26, 1999

Bob Durand, Secretary

Executive Office of Environmental Affairs, Attention: MEPA Office

Laura Rome, EOE No. 11865

100 Cambridge Street - 20th Floor

Boston, MA 02202

RECEIVED

MAR 21 1999

MEPA

Re: ENF: Emerald Necklace Environmental Improvements Master Plan &
Phase I Muddy River Flood Control, Water Quality and Habitat Enhancement

Dear Secretary Durand:

The ENF proponents propose bank to bank dredging of the Muddy River system (171,000 cubic yards) at a cost of 40+ million under Phase I. This appears to be an expensive, environmentally drastic, short-term solution to water quality, flooding and invasive plant problems given the history on page 13 of repeated dredging of major elements of the system over the years without long term benefit. We would agree with the U.S. ACOE that without substantial monies spent in source control the benefits of bank to bank dredging would last about a decade given sediment/organic inputs in the order of 2000 cubic yards/ year.

We would recommend the major project emphasis be on source control of CSOs, sediment, sewerage and oil and that the EIR quantify point and non-point inputs and explore various source control options in a cost benefits framework involving all feasible alternatives to bank to bank dredging. In addition to alternatives mentioned in the ENF such as flow augmentation and/or dredging of flow restricted areas, the EIR should consider a mix of lower cost approaches as well such as the use of alum to fix bottom nutrients and contaminants in non-dredged areas, and the use of herbicides to control exotic plants.

Sincerely;

Richard L. Keller

Richard L. Keller
Aquatic Biologist, MDFW

Cc. M. Tisa, MDFW
W. Hoyt, MDFW
P. Jackson, MDFW

Division of Fisheries & Wildlife

Field Headquarters, One Rabbit Hill Road, Westboro, MA 01581 (508) 366-4470

An Agency of the Department of Fisheries, Wildlife & Environmental Law Enforcement



Federal Emergency Management Agency

Region I

J.W. McCormack Post Office &

Court House

Boston, MA 02109-4595

P

J.1

April 21, 1999

Robert Durand, Secretary of Environmental Affairs
Executive Office of Environmental Affairs
Attention: MEPA-EOEA 11865
100 Cambridge Street
Boston, MA 02202

MEPA

APR 22 1999

RECEIVED

Dear Secretary Durand:

Thank you for the opportunity to comment on the Environmental Notification-Form (ENF) for the Emerald Necklace Environmental Improvements Master Plan which has been undertaken in accordance with the Massachusetts Environmental Policy Act. As you are probably aware, the City of Boston and Town of Brookline have submitted a Hazard Mitigation Grant Program (HMGP) application to the Federal Emergency Management Agency (FEMA) through the Commonwealth of Massachusetts Emergency Management Agency and Department of Environmental Management. This project proposes to implement the first portion of the Emerald Necklace Master Plan that includes the removal of sediment, debris, and other flow restrictions within the Charlesgate portion of the Muddy River. This letter is intended to briefly highlight FEMA's review of the ENF and outlines our responsibilities under the National Environmental Policy Act (NEPA) for the environmental review of the proposed HMGP project.

In general, the ENF has provided a good summary of potential environmental issues related to the implementation of this Master Plan. However, it is important to emphasize that until site specific details are developed, including staging areas and dredging methodology, it is difficult to accurately assess the environmental impact of the action. Our primary concern with the ENF is that the treatment of both dredge materials and the associated waters be adequately identified and evaluated in the EIR as substantial issues and appropriately addressed. In addition, the discussion of historical and archaeological resources (Schedule 10), while describing the goal of restoring many of the cultural and functional aspects of the Emerald Necklace Park System, fails to discuss the potential for adverse affects to a listed Historic District. The potential for effects are most likely due to ground disturbance at the staging areas and potential modification to the water level and bank areas of the waters within the park system. Although upon detailed evaluation these impacts may not be adverse, it is important to accurately delineate the area of potential effects (APE) for the action as it relates to cultural resources.

For the Charlesgate portion of the Plan, FEMA has initiated an Environmental Assessment (EA). FEMA follows the requirements of the National Environmental Policy Act of 1969 (NEPA), the Council on Environmental Quality (CEQ) regulations

implementing NEPA (40 Code of Federal Regulations [CFR] Parts 1500 through 1508), and FEMA regulations for NEPA compliance (44 CFR Part 10) which direct FEMA and other Federal agencies to fully understand and take into consideration during decision making the environmental consequences of proposed federal actions (projects). Therefore, FEMA must comply with NEPA before making federal funds available for the proposed HMGP project.

In undertaking an Environmental Assessment, FEMA is required to evaluate the relevant environmental impacts for all feasible alternatives, including "No Action", which meet the purpose and need for the proposed action (in this case, reducing flooding in the study area), and disclose this information to the public. Although FEMA will utilize all relevant existing documentation including State and federal Agency consultation, existing studies and reports, and survey information, there are several federal environmental requirements which differ from the State environmental review process. The following paragraphs outline the major components of FEMA's environmental review that would differ from the State's Environmental Impact Report (EIR).

Executive Order (EO) 11988 requires Federal agencies to take action to minimize occupancy and modification of the floodplain. Specifically, EO 11988 prohibits Federal agencies from undertaking activities that occur within or affect the 100-year floodplain unless there are no practicable alternatives. For critical facilities such as shelters and hospitals, impacts to and within the 500-year floodplain are evaluated. FEMA's regulations for complying with EO 11988 are promulgated at 44 CFR Part 9. FEMA applies an Eight-Step Decision-Making Process, required by 44 CFR Part 9, to meet the requirements of E.O. 11988. The proposed HMGP project would occur within a floodplain and therefore the eight-step process, including public notice, must be followed.

Executive Order 11990, Protection of Wetlands, requires federal agencies to take action to minimize the loss of wetlands. The NEPA compliance process requires federal agencies to consider direct and indirect impacts to wetlands, which may result from federally funded actions. To assess the potential impacts to wetlands, the National Wetland Inventory (NWI) maps, soil survey information, and a field investigation will be conducted in the areas that would be impacted by the proposed project and alternatives. FEMA will also consult with the Army Corps of Engineers to identify potential wetland impacts and identify required Clean Water Act permits.

On February 11, 1994, President Clinton signed EO 12898, entitled "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations." The EO directs Federal agencies "to make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low income populations in the United States". This project will be evaluated for potential adverse and disproportionate impacts to low income and minority populations.

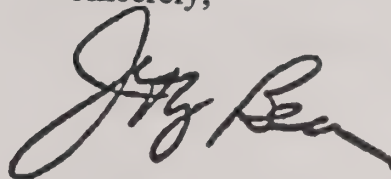
The Endangered Species Act and Fish and Wildlife Coordination Act require FEMA consultation with the U.S. Fish and Wildlife Service (USFWS), U.S. National Marine Fisheries Service, and the State Agency with equivalent resource responsibilities. FEMA will utilize State listings/Database reports that include both State and federally listed

species, and coordinate with USFWS and NMFS if there are threatened or endangered species or their habitat present.

In addition to review under NEPA, consideration of impacts to cultural resources is mandated under Section 106 of the National Historic Preservation Act (NHPA) as implemented by 36 CFR Part 800. Requirements include the need to identify historic properties that may be impacted by the Proposed Action or Alternatives. Historic properties are defined as archaeological sites, standing structures, or other historic resources listed in or determined eligible for listing in the National Register of Historic Places (NRHP) (36 CFR 60.4). FEMA is in consultation with the Massachusetts Historic Commission to identify cultural resources in the area and potential impacts to those resources. If adverse affects are likely, FEMA will enter into a Memorandum of Agreement (MOA) with the State Historic Preservation Officer to identify mitigation measures for those affects.

Thank you for the opportunity to provide information related to the environmental review process. If you have any questions or concerns, please feel free to contact William Kennedy, Regional Environmental Officer at (617) 223-9528 or Fred Vanderschmidt, Project Officer, at (617) 223-4184.

Sincerely,

A handwritten signature in black ink, appearing to read "Jeffrey A. Bean". The signature is fluid and cursive, with the first name "Jeffrey" being more prominent and the last name "Bean" following in a similar style.

Jeffrey A. Bean
Regional Director



April 21, 1999

Q

RECEIVED

APR 26 1999

MEPA

Secretary Bob Durand
Executive Office of Environmental Affairs
MEPA Office attn. Laura Rome
100 Cambridge Street, 20th Floor
Boston, MA 02202

RE: EOEA # 11865 The Emerald Necklace Environmental Improvements Master Plan, Phase I
Muddy River Flood Control, Water Quality and Habitat Enhancement

Dear Secretary Durand:

I submit these comments on behalf of Historic Massachusetts, the nonprofit organization dedicated to preserving the Commonwealth's historic and cultural resources through advocacy, education and community revitalization. The project under consideration falls within the Olmsted Park System Historic District which is listed on the State and National Registers of Historic Places and is also a City of Boston Landmark.

Phase I of the project involves dredging to improve flood control and water quality. Later phases of the project will address landscape improvements, revegetation, traffic circulation and building/bridge restoration. We support the flood control and water quality improvements. Water quality improvements will enhance the park itself and flood control will assist in the protection of many historic resources near the Muddy River. However, the current plans do not adequately address the protection of existing historic fabric of the Emerald Necklace system and recent restoration of the banks of the watercourses.

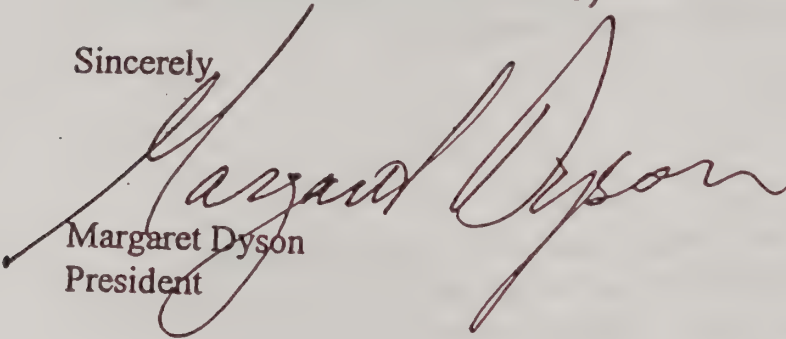
The Description and assessment of the Project's other impacts on land and Description and assessment of the Project's impacts on historical and archaeological resources do not identify or protect historically significant areas, although delineation of significant vegetation is identified. Both the designed landscape features and certain vegetation have historic as well as environmental significance. These areas must be identified and protected in the dredging process.

The Description and Assessment of proposed measures that would mitigate impacts on land does not adequately describe any measures that would mitigate impacts on the historic quality of the park, other than to note that "any BMP proposed in Phase I EIR not be intrusive and blend with the historic and visual aspects of the park." The Description and assessment of proposed measures that would mitigate impacts on historic and archaeological resources is not answered beyond the notation N/A.

While we agree that it is important for additions to historic landmarks be compatible with the landmark, it is vital that the historically significant elements of the landscape are protected during the project. The assumption that the stated goal of the project, to "restore many of the cultural and functional aspects of the ... System", eliminates the need to protect the existing historic resource is not acceptable. A plan to minimize the adverse impact of the work itself - the use of heavy equipment, the schedule and placement of work areas to protect historic plant materials, and the placement of laydown areas - on this nationally significant historic landscape must be developed and reviewed by the relevant agencies before the project can proceed.

Thank you for the opportunity to comment on this project. If you have any questions, please feel free to contact me at 617-723-3383)

Sincerely,


Margaret Dyson
President

cc: Massachusetts Historical Commission
Boston Landmarks Commission
Boston Parks and Recreation Department
Brookline Preservation Commission
Brookline Department of Public Works
Boston Preservation Alliance
Emerald Necklace Conservancy

55A St. Paul Street
Brookline, MA 02446
March 25, 1999

R

Secretary Robert Durand
Executive Office of Environmental Affairs
100 Cambridge Street
Boston, Massachusetts 02202

11865

Dear Secretary Durand:

I attended the meeting at the Winsdor School on March 16th regarding the Emerald Necklace Improvements Master Plan. The presentation of the work to be done over a 10-15 year period was well presented.

My major concern regards ^{Plans}for continuous outreach to the population living along the Emerald Necklace that is not affiliated with advocacy groups or civic associations. These are citizens who may not realize that their voice and presence is important and would be welcome and appreciated. They would not be on anyone's mailing list and need to be reached through other channels in their neighborhood and community.

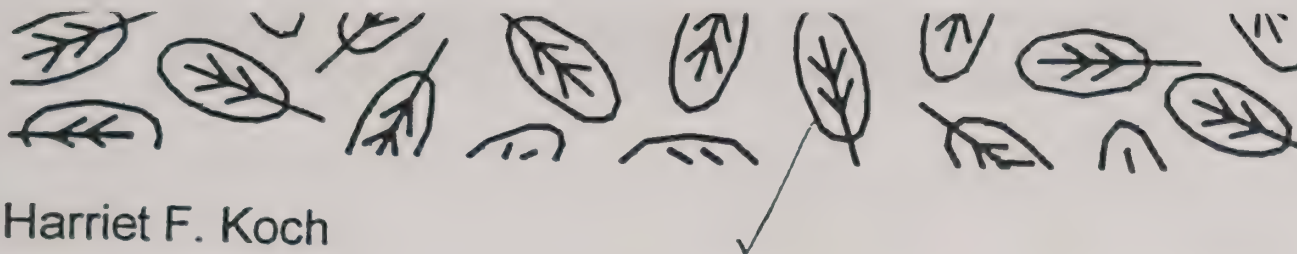
This presents a valuable opportunity for government and citizen groups to connect with these residents whose lives will be affected positively by this long-term undertaking.

I acknowledge that community outreach will be a part of the master plan but I want to go on record that it will be an important part from beginning to end.

Sincerely,

Pauline R. Katz
Pauline R. Katz

Member: Friends of Muddy River
Restore Olmdsted Waterway (ROW)
Muddy River Action Group
Town Meeting Member, Precinct 7



Y/K
S

Harriet F. Koch

211 Sargent Road
Brookline, MA 02445-7515

Telephone 617-277-2151

RECEIVED

MAR 29 1999

MEPA

Robert Durand
Secretary of Environmental Affairs
100 Cambridge Street
Boston, MA 02202

March 24, 1999

Dear Senator Durand,

I have attended two different presentations of the Environmental Master Plan by Fran Beatty of the Boston Parks Department and Jason Cortell of Cortell Associates in regard to the Environmental Improvements Master Plan for the Emerald Necklace. The presentations were excellent. The plan promises so much! I was especially impressed by the planning that is going into future maintenance such as planned access to the various parts of the Muddy River and pools to collect sediment (over-dredging). I very much hope we can get it all together and find the funding.

As a Brookline resident, living near Jamaica Pond, I am working to clean up our local pond known as Sargent Pond which we call the headwaters of the Muddy River since it has an above ground brook that flows through a culvert into Jamaica Pond. I will also support participation in the plan, financial and other, by the town of Brookline, which is probably the most useful thing I can do. I hope you will keep all of us interested citizens informed, by regular meetings open to the public and mailings as appropriate.

Sincerely yours,

Harriet F. Koch

Medical Academic and Scientific Community Organization, Inc.

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April 22, 1999

RECEIVED

APR 26 1999

MEPA

Mr. Bob Duran
Secretary of Environmental Affairs
100 Cambridge Street
MEPA Office, 20th Floor
Boston, MA 02202
Attn: Laura Rome

Dear Secretary Duran,

On behalf of our 17 members in the Longwood Medical and Academic Area (LMA), we are commenting in support of the Emerald Necklace Environmental Improvements Master Plan and Phase I, Environmental Notification Form.

We would like to congratulate the Boston Parks & Recreation Department on this major achievement. Overall this report is very good, and much needed. MASCO members have experienced damages in the millions of dollars due to the flooding of the Muddy River. It is very important to us that mitigating actions be taken as soon as possible.

We are looking forward to more details related to environmental protection of the fish, wildlife and the natural resources of the Muddy River. We have some concerns related to the dredging process, specifically, odors from dredging spoils, traffic disruption, and negative aesthetic impacts. We also believe that there will be a need for area-wide construction coordination. As much as two and a half million square feet of construction/development are projected to take place in the LMA over the next ten years, concurrent with the proposed dredging. MASCO would like to work with the agencies regarding where staging/dewatering will occur, and how construction will be phased, to reduce the negative impacts on employees, patients, students, and visitors to the LMA.

Related to odors, traffic disruption, and aesthetic concerns, we have a number of questions. In the report, and at the March 16th, 1999 public meeting, both the Sears rotary and Evans Way Park were mentioned as areas for lay-down and de-watering. The Sears rotary is a major "Gateway to the LMA," and Evans Way abuts dormitories, is used for graduation activities, and is currently non-toxic land. Our questions include:

- Are there ways to buffer the pedestrian from the proposed construction?
- Are there ways to mitigate the traffic congestion impacts?
- Are there ways to mitigate the foul odors?
- How long will the dewatering process take?
- Could foul odors, traffic disruptions and aesthetic concerns be reduced during peak travel times?
- Are there ways to improve the area aesthetically, while this process is taking place?

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375 Longwood Avenue, Boston, Massachusetts 02215-5328 617 632-2310 Fax: 617 632-2759

MEMBER INSTITUTIONS:

Beth Israel Deaconess Medical Center • Brigham and Women's Hospital • Children's Hospital • Dana-Farber Cancer Institute • Emmanuel College • Harvard University (Medical School, School of Dental Medicine, School of Public Health) • Judge Baker Children's Center • Joslin Diabetes Center • Massachusetts College of Art • Massachusetts College of Pharmacy and Allied Health Sciences • Simmons College • Temple Israel • Wheelock College • Wentworth Institute of Technology • The Winsor School

We would like to work with the agencies and their consultants to find the best ways to reduce negative impacts to the area. We have attached more specific comments on the report on the next page. To that end we request that MASCO serve on the Citizen's Advisory Committee (CAC), on behalf of the 17 LMA institutions.

Thank you for this opportunity to comment.

Sincerely,



Jan Henderson

MASCO

April 21, 1999

Specific comments on Emerald Necklace Environmental Improvements Master Plan and Phase I, Environmental Notification Form follow:

- Please add "removing and day-lighting culverts" to the list of infrastructure improvements in the second paragraph on page three. The proposal is not only to replace culverts.
- Page 23, silt curtains. Please include some kind of time frame, so that the curtains and booms do not stay in the river indefinitely.
- Page 25. Table 2 is unclear, and I could not find the reference in the text. Is this what was tested for, what was found, and/or what is proposed to be tested for?
- On the dredging certification application (page 2 of 5), it states that "it is recommended that the Muddy River system be dredged once every 10-20 years. It is expected that this dredging interval will change." Will the dredging interval be more or less frequent? Why would the dredging interval change? Is it realistic to dredge more frequently than every 30 years?
- The banks are severely eroded in the Riverway portion of the Muddy River, with outfall pipes suspended out over the water, exposing six feet or more of conduit. Page 6-1 includes some funding for bank stabilization in this area, but it is not mentioned as a recommended action on page 2-8, 2.3.5 Riverway. Please include remediation of this problem as a part of your bank stabilization project.

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The Commonwealth of Massachusetts
William Francis Galvin, Secretary of the Commonwealth
Massachusetts Historical Commission

April 21, 1999

Secretary Bob Durand
Executive Office of Environmental Affairs
MEPA Office

Laura Rome - EOE # 11865
100 Cambridge St., 20th Floor
Boston, MA 02202

Faxed
4-21-99

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APR 23 1999

MEPA

RE: Phase I Muddy River Flood Control & Water Quality Improvements, Emerald Necklace Environmental Improvements Master Plan, Boston & Brookline, MA; MHC #9170; EOE # 11865

Dear Secretary Durand:

Staff of the Massachusetts Historical Commission (MHC) have reviewed the Environmental Notification Form for the proposed project referenced above. The proposed project is located within the Olmsted Park System Historic District which is listed in the State and National Registers of Historic Places. After a review of MHC files and the information submitted, MHC has the following comments.

MHC understands that the proposed project involves the implementation of a Muddy River flood control and water quality improvement initiative as Phase I of a long-range Emerald Necklace Environmental Improvements Master Plan. The Phase I project will involve the bank-to-bank sediment dredging of the Muddy River to be completed in sections. The first section of the dredging project will extend from Ipswich Street to the Charles River, with subsequent sections to include: (1) the area between the Agassiz Bridge and the lagoon behind the Rose Garden, (2) the area between Ipswich Street and the Agassiz Bridge, and (3) the balance of the Back Bay Fens and the Riverway. MHC further understands that the proposed dredging will deepen the Muddy River, upgrade flood control, remove nuisance vegetation, improve fisheries/wildlife habitat and water quality, and enhance recreational use of the Emerald Necklace parklands. Dredged sediments will be transported to a DEP-approved lined landfill.

MHC previously reviewed the U.S. Army Corps of Engineers' *Muddy River Feasibility Study* (July 1998) which recommended flow augmentation, with no dredging, as the preferred alternative for addressing flood control and water quality issues in the Muddy River. This alternative would have required the installation of a pumping station, intake structure, discharge line, and cascade aeration structure. In a letter of August 31, 1998, MHC indicated that further review of the design and locations of the proposed installations would be required in order to assess the project's potential visual effects on the significant landscape features of the Olmsted Park System National Register Historic District. It is the understanding of the MHC that dredging is now the preferred alternative, and that the construction of flow augmentation structures is not proposed at this time.

On April 1, 1999, MHC staff met with staff of the Federal Emergency Management Agency (FEMA) and the Department of Environmental Management (DEM) regarding the proposed dredging activities. At that meeting, MHC requested the following information: (1) an assessment of what effect the proposed initial-phase dredging may have on

220 Morrissey Boulevard, Boston, Massachusetts 02125 • (617) 727-8470

Fax: (617) 727-5128 • TDD: 1-800-392-6090

www.state.ma.us/sec/mbc

upstream water levels and, if water levels are expected to decrease, an assessment of any potential effects on exposed river banks and nearby vegetation; and (2) information on the age of the underwater stop log structure (Ipswich Street vicinity) which is proposed for removal as part of the project. FEMA agreed to provide this information in order to assist MHC in determining what effect the proposed project may have on historic and archaeological properties. MHC looks forward to receiving and reviewing the requested materials, and to consulting further with the project proponents regarding the Environmental Improvements Master Plan for this State-and-National Register listed historic landscape.

These comments are provided to assist in compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (36 CFR 800), Massachusetts General Laws, Chapter 9, Sec. 26-27c, as amended by Chapter 254 of the Acts of 1988 (950 CMR 71.00) and MEPA. If you have any questions, please feel free to contact Gary Hammer at this office.

Sincerely,

for *Brona Simon DSHPD*
Judith B. McDonough
Executive Director
State Historic Preservation Officer
Massachusetts Historical Commission

cc: Boston Landmarks Commission
Boston Parks and Recreation Department
Boston Preservation Alliance
Brookline Preservation Commission
Brookline Department of Public Works
Historic Massachusetts, Inc.
Marc Paiva, U.S. Army Corps of Engineers
Fred Vanderschmidt, FEMA

RECEIVED

APR 21 1991

MEPA

M U D D Y
R I V E R
A C T I O N
G R O U P

V

EOEA No. 11865

Comments addressed to Laura Rome, MEPA analyst

The Muddy River Action Group is a coalition of citizen and community groups, representatives of the local, state and federal governments and agencies, and private institutions that meets regularly to discuss and work towards an action plan to improve the Muddy River and environs.

We have been involved for many years working toward the improvement of the Muddy River. So, we are very excited that the Boston Parks and Recreation Department and the Brookline Department of Public Works have undertaken a Master Plan to improve the Muddy River and its environs. We strongly advocate and support projects, in the following prioritized order, that mitigate flood damage, improve water quality and restore and beautify the park landscape. Having discussed the various elements of the overall master plan, we believe that for immediate flood relief it is necessary to:

1. Remove the constrictions at the railroad bridge between Ipswich Street and the Mass Pike,
2. Daylight the river from above the former Sears parking lot to Fens Pond,
3. Daylight the river from the Fens Pond to Higginson Circle, and
4. Install a larger culvert at Storow Drive, where the Muddy River enters the Charles River.

We believe that the two daylighting projects are essential to relieve the flooding of homes and businesses in Brookline and the MBTA. The other two projects are required to eliminate flooding in the Fenway. Appropriations should be directed to these projects, first and foremost. In the current plan, there are proposed actions, which appear to create obstacles for this approach. The dewatering facilities and staging areas can not be located where the river is to be daylighted, since this would force the daylighting to be the last project. The staging and dewatering requirements have to be placed in some other location.] 1

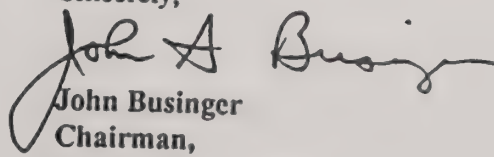
After these projects, when the river's water flow is no longer constricted, we believe that dredging should commence to improve the hydraulic flow of the river and to remove contaminated sediment, which will improve water quality.] 2

Unnecessarily disruptive dredging and watercourse widening in the Victory Garden area should be avoided.] 3

Unfortunately, due to the significant amount of work and equipment that will be in the park for these projects, it is necessary to wait for some of the landscaping until this work is scoped out so that flood mitigation and water quality work don't destroy landscape restoration work. Landscape work that is clearly unaffected by flood mitigation and water quality work should be undertaken in a timely manner.] 4

The Muddy River Action Group looks forward to the implementation of the "Emerald Necklace Environmental Improvements Master Plan & Phase 1 Muddy River Flood Control, Water Quality and Habitat Enhancement" in accordance with the recommendations of our submission.

Sincerely,


John Businger
Chairman,
Muddy River Action Group



Division of Fisheries & Wildlife

Wayne F. MacCallum, *Director*

21 April 1999

NHESP File: 98-417 **RECEIVED**

APR 21

MEPA

Robert Durand, Secretary
Executive Office of Environmental Affairs
100 Cambridge Street, 20th Floor
Boston, Massachusetts 02202

Project Name: The Emerald Necklace Environmental Improvements Master Plan
Proponent: Boston Parks and Recreation Dept. & Brookline Dept. of Public Works
Location: Boston
Document Reviewed: ENF
EOEA File Number: 11865

Attention: MEPA Unit/Laura Rome

Dear Secretary Durand,

The Natural Heritage and Endangered Species Program ('NHESP') has reviewed the Environmental Notification Form for the Emerald Necklace Improvement project and would like to offer the following comments regarding potential impacts to state-protected rare species.

Two rare species, the 'threatened' Threespine Stickleback (*Gasterosteus aculeatus*) and the 'endangered' Pied-billed Grebe (*Podilymbus podiceps*) occur in the area of Olmstead Park. NHESP has no record of the Spotted Turtle occurring in this area as stated in the BNF. NHESP will need to review plans for dredging and restoring this area to ensure that these species are not harmed.

We appreciate the opportunity to comment on this project.

Sincerely,

Hanni Dinkeloo
Endangered Species Counsel

Natural Heritage & Endangered Species Program

Route 135, Westborough, MA 01581 Tel: (508) 792-7270 x 200 Fax: (508) 792-7275
An Agency of the Department of Fisheries, Wildlife & Environmental Law Enforcement
<http://www.state.ma.us/dfwels>

Bob Durand
MEPA Unit
EOEA No. 71865
100 Cambridge Street
Boston, MA 02202
April 13, 1999

✓
APR 14 1999

MEPA

X 4/14

Déar Mr. Durand:

The proposed \$43 million restoration of Olmstead's Emerald Necklace (The Fenway News, April, 1999) is more than welcome: it is necessary if Boston is not to lose the Olmstead legacy. Imagine NYC without Central Park. What remains of Boston's turn-of-the-century civility as a City is due in part to that ring of greenery and that window on the wildlife that the Fens, the Muddy River, Jamaica Pond and their connectors provide.

I have been walking the Muddy River section 2-3 times weekly since the mid-80s, have gotten to know its flora and fauna in all seasons, and have watched it deteriorate not only because of the floods but because of the inept care it is given by both Brookline and Boston in terms of caring for its trees and shrubs, bridges, paths and waterways. Just recently, for example, the lilacs, viburnum and other flowering shrubs on the Brookline side near the Police call box were cut to the ground, destroying them as a source of food and cover for the birds, and of blooms for the walkers and bikers. Over the years, trees and plantings presumably placed by Olmstead have been removed and not replaced, while tall invasive bamboo-like weeds have been allowed to take over portions of the hillsides and river banks. These are cut back every year, but should be permanently removed using the excellent environment-safe shrub and weed killers now available. The few new trees that have been planted are in conflict with their surroundings, both as to location and type of tree. One would hope that, if the Emerald Necklace is to be restored, its restoration would follow Olmstead's original plans as closely as possible rather than permit some eager but inexperienced amateurs to "do their thing" on something as beautiful in conception, professional in design and venerable in age as the Emerald Necklace, particularly the Muddy River section with its wonderful variety of glens, glades and copses gracing the stream, and the unusual variety of flowering trees and bushes which bloom from early spring through early fall.

The gorgeous landscaping to the Riverway entrance of Muddy River that was done by MASCO (?) 2 or 3 years ago was ill-advised in its choice of perennials. For the most part it was planted in day lilies and iris, both of which need sun. The area is in deep shade from May through October. Consequently, the plantings are not as robust and beautiful as they should be by now. The area called for shade-loving perennials.

The bridge system adjacent to this planting was beautifully restored last year and recently was the object of graffiti goons. When the bridge was completed last fall, the landscapers took over and restored most of the terrain, adding plantings that may not have been original Olmstead, but which may help stop bank erosion in some cases. No sooner had the landscaping been completed than some trucks came in and drove through several sections leaving 6 inch ruts that are still there. How could something like this happen? Further, on the south side of the section of that bridge system with the steps, which the landscapers had used for storage dumps, machinery, etc a water runoff system was created by the landscaping which has cut through the restored road. Attempts to correct it with straw bales have been ludicrously pitiful.

The youth crews employed during the summer to keep the Muddy River section in shape have been inexperienced and poorly motivated and supervised, judging from observing them in action and talking to some of them. It is not fair to the kids to be deprived of good teaching and good supervision. And it's a ripoff for the taxpayers. Most years the Brookline side has been better maintained than the City side, but last year, the Brookline side deteriorated, while the City side was renovated. The single fault with that renovation job was the failure to use stone chips for the entire roadway surface. Those sections with the stone chips held up well over

the winter and were usable every day whereas those sections that were surfaced with stone dust (it looked like) and rolled turned into mud and potholes when the rain and frost-heave season came on, looking much what they did before the face lift, though not as severe.

Thank you for taking the time to read this letter. If it leaves any trace in your memory, let it be: PLEASE restore the Olmstead park system adhering as closely as possible to Olmstead's original landscape architecture. It is an obligation we owe the memory of Olmstead, to the tax payer and to posterity.

Sincerely yours,


Bernard J. Hansil, M.D.
226 Calumet Street
Boston, MA 02120
445-4602 (Home)
667-4301 (Hospital)

:

:



Restore Olmsted's Waterway

Board of Directors

RECEIVED
APR 27 1999

MEPA

To MEPA:

From: Irene V. Gillis, Chair
Restore Olmsted's Waterway

As we contemplate the expenditure of millions of dollars to restore the water quality of the Muddy River to Class B (Fishable, Swimmable) and to prevent it from doing more flood damage - as in 1996 and 1998. I think we must look carefully at the proposed plan(s) - Cortrell and/or CDM (Camp Dresser McGee) and ACE - (Army Corps of Engineers).

My first recommendation is that you remember the mantra - Prevention is the Solution to Pollution.

Will millions spent on dredging solve the problem? I say "NO!" Although I favor removal of the terribly polluted sediments of this River, I ask how can it be prevented? Where is it coming from?

I submit that street sanding in the winter is a major cause. Can it be prevented? "Yes" - There should be grit separators along the river and regular cleaning of the traps and storm drains...regular outside inspection to accomplish this would be necessary.

Trash pickups in bordering municipalities is ridiculously simple. Enforce litter laws - involve school children so they will learn not to litter. Litter is not a major problem.

Oil and grease - Again enforcement. Did Boston University inspect its underground tanks before its recent spill into the Charles? This annual inspection is required by the L.U.S.T. (Leaking Underground Storage Tanks) law. Enforce it!! Likewise Brookline is wrestling with some drains around Harvard St. that had diesel oil leaking in from town-owned tanks. Were they inspected annually? It runs to the River.

Correction of illegal cross connections between sewers and storm drains that lead to the Muddy. I have seen no report from either Brookline or EPA on how many illegal connections were found on the Village Brook. Have you?

Recognition that Brookline and Boston are watershed areas. Tighter controls over turning green space into parking lots, wider highways, soccer fields etc. Bit by bit the sponge that prevents flooding



is being destroyed.

Analysis of USGS sediment report. Where are these heavy metals etc coming from? Why is the Emmanuel Drain the worst? It doesn't come from Emmanuel.

Why does the siphon at Longwood under the River periodically blow its caps and spread medical waste into the river: surgical gloves, bandage wrappings, syringes, and only God knows what else. This is a serious problem stubbornly denied by the municipalities. We have witnesses.

Why is Franklin Park and Arnold Arboretum - included in the Muddy River plans? I think both are worthy "green space" areas. But Franklin Park does not flow into the Muddy, nor do streams from Arnold Arboretum effect it. I heard that some sewer pipes were recently diverted to the Arboretum to help prevent flooding. A rumor that I hope is not so.

The Muddy River plan must concentrate on its most seriously polluted areas and that is not Sargent's Pond, Franklin Park, or Jamaica Pond.

Going "up the pipe," those concerned should closely inspect drains from dry cleaners, gas stations, ice and coal facilities, photo labs, as they are sources of dangerous chemicals...our "industries."

Phragmites are a serious problem in this River, especially along the Riverway. In this location on the Boston side there is already serious eutrophication.

Dredging is a great solution because it gets the phragmite rhizomes (roots). Regular mowing would also help, like the plan long recommended by Dr. Norton Nickerson of Tufts University. Not just any old time, but 1) after the birds nest, 2) in the middle of the summer, and 3) early fall. That's the easy, systematic way to destroy them. Cheap in the long run!

Flooding - I've been a victim four times. The Muddy River does not overflow its banks. In 1984 the MWRA notified Brookline it must eliminate its C.S.O.'s (Combined Sewer Overflows) at Tannery Brook and Kent Square (now called the Longwood drain). Brookline said no problem and simply diverted the storm drains into the sewers!! In times of heavy rain the sewers lack the capacity to carry the heavy rain water and pop their caps sending a river of water down the Riverside track to Kenmore Station and into hundreds of basements, plus schools, parks, parking lots - even Brookline's own Water Department. I've witnessed this and suffered terrible damage. I call it the Tracks River.

You are wasting time and public money not addressing these sewer problems. Should I call it the River of De-nile or the Tracks River? Either way its pretty sad.

I think the proposed plan should be carefully studied by a group of highly qualified engineers, totally objective. No contracts or money involved and no landscape professionals. Landscaping is well down the road in order of priorities. These engineers should walk both sides of the River from Wards Pond to the Charles and also consider the contributions from Stoney Brook. No computer simulations, please.] 6

I'm sorry to say that the plan proposed does not fully understand the roots of the problems and will not solve them.

Thank you for your interest.

Yours sincerely,



Irene V. Gillis, Chair
R.O.W.

163 Kent St

Brookline

02445

ORIGINAL - GOVERNOR CELLUCCI
COPY - MAYOR MENINO
COPY - COMMISSIONER WEBBER

7



Riverway Square Condominium Trust

114-122 RIVERWAY, BOSTON, MA. 02215

September 30, 1998

MUDDY "CRUDY" RIVER

DEAR SIR:

WILL THIS RIVER WHICH IS A PART OF THE "EMERALD NECKLACE OLMSTEAD WATERWAYS" EVER BE CLEANED UP BY THE RESPONSIBLE AGENCIES. ITS BANKS IN BOSTON CANNOT BE APPRECIATED BY THE LOCAL RESIDENTS AND VISITORS ALIKE, BECAUSE THEY ARE UNSIGHTLY.

FOR YEARS, CLEAN UP PROGRAMS HAVE BEEN TALKED ABOUT, BUT THE RESULTS SO FAR ARE ALMOST NIL. HOPEFULLY, BEFORE THE NEXT CENTURY SOME FUNDS WILL NOT ONLY BE APPROPRIATED BUT UTILIZED TOWARDS MAKING THIS SMALL RIVER A PLEASURE TO WALK ALONG ITS BANKS.

I HAVE NOTICED LATELY A FLOW IN THE RIVER SINCE THE BOSTON DRAIN AND SEWER DEPARTMENT CLEANED OUT THE CORNERS OF BROOKLINE AVENUE AND THE RIVERWAY. FOR THE RESIDENTS SAKE, I HOPE THAT IT IS THE START OF A PROGRAM TO IMPROVE THE MAINTENANCE OF THE UNDERGROUND WATER PIPES. THIS VITAL JUNCTION HAS FOR YEARS CAUSED NUMEROUS FINANCIAL AND EMOTIONAL PROBLEMS TO THIS AREA'S RESIDENTS WHO HAVE BEEN IGNORED IN SPITE OF CONTINUOUS FLOODING PROBLEMS INVOLVING THE MUDDY RIVER, THE CITY OF BOSTON, MDC, AND THE STATE EPA.

THIS CLEANING AND FLOODING SITUATION SHOULD BE RESOLVED, NOT JUST DISCUSSED. IF THE FUNDS ARE AVAILABLE, USE THEM PROMPTLY FOR THE RELIEF OF THE LOCAL RESIDENTS WHO HAVE SUFFERED FOR MANY YEARS. THE MUDDY RIVER AREA COULD BE A NICE PLACE TO VISIT OR HAVE A PICNIC OR SIMPLY ENJOY THE SCENERY. IT CERTAINLY IS NOT THE CASE NOW AND HAS NOT BEEN FOR YEARS.

SINCERELY,

Jean Belanger
JEAN BELANGER
SUPERINTENDENT
120 RIVERWAY #19
BOSTON, MA. 02215
617-232-9868

NOTA BENE - WHY DON'T YOU VISIT THE AREA SOON, AND SEE FOR YOURSELF HOW THE MUDDY RIVER AND ITS BANKS CAN BE MADE A PLEASANT PLACE TO VISIT AND ENJOY.



WHERE IS

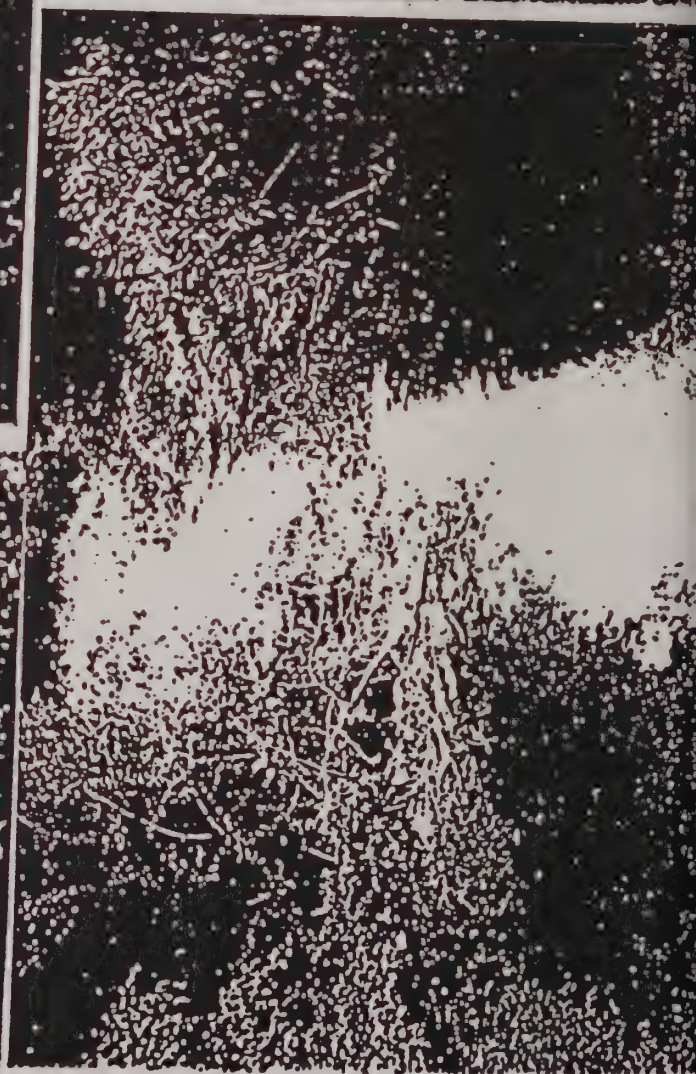
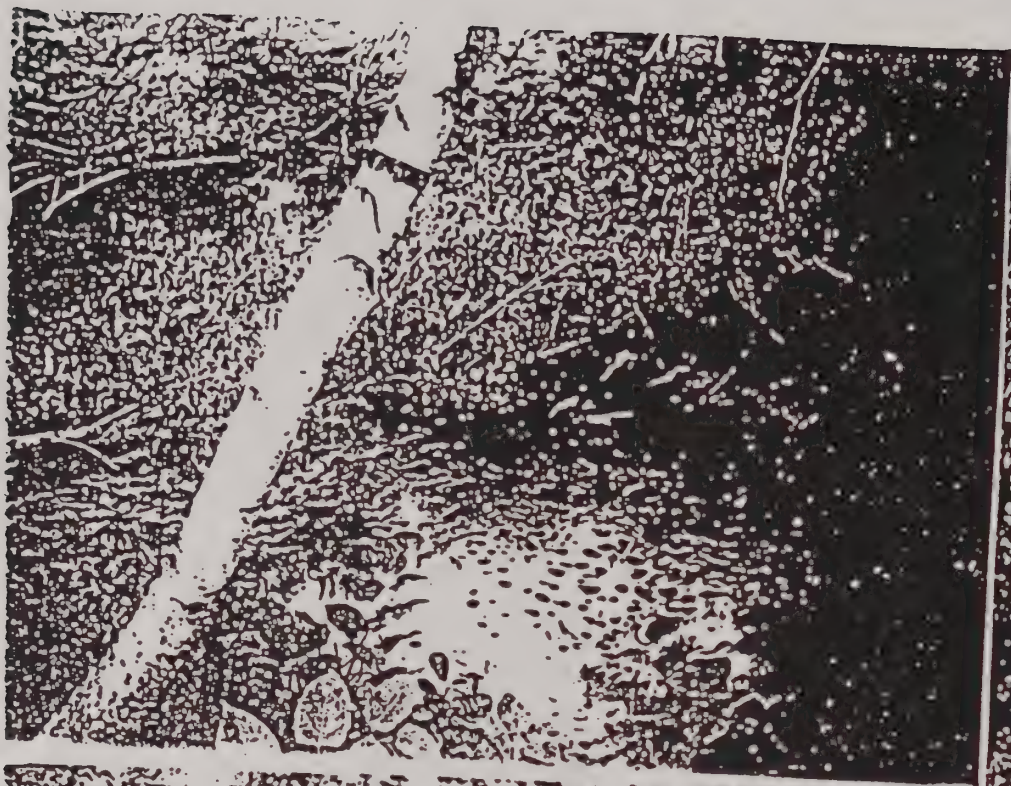


THE RIVER?





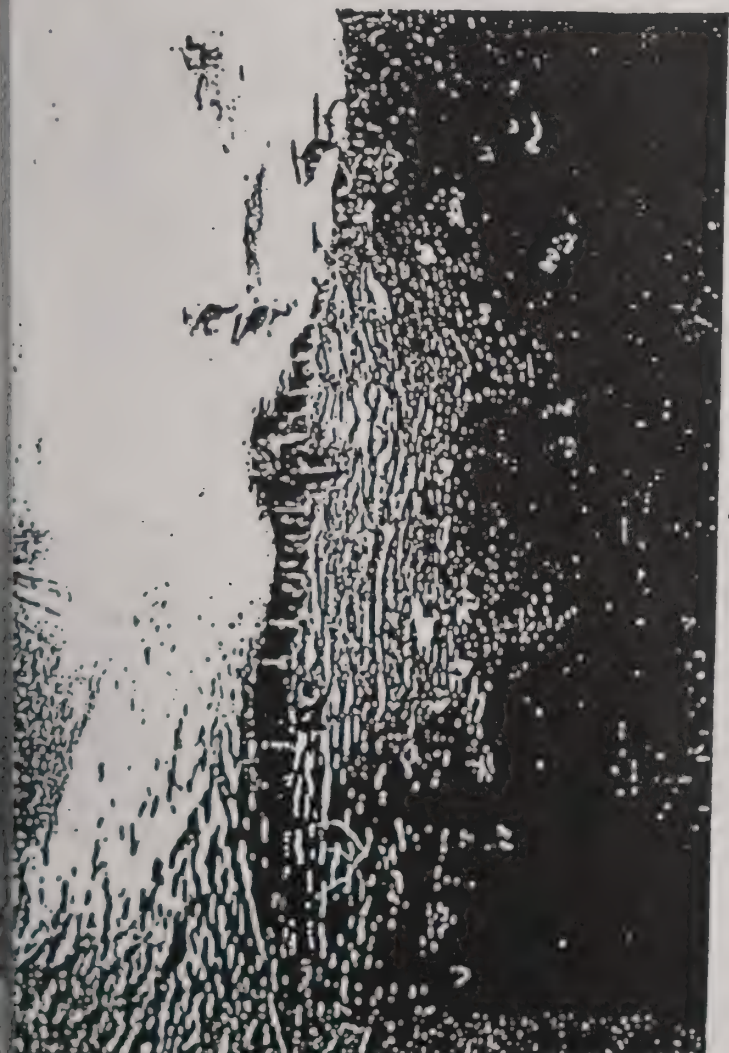
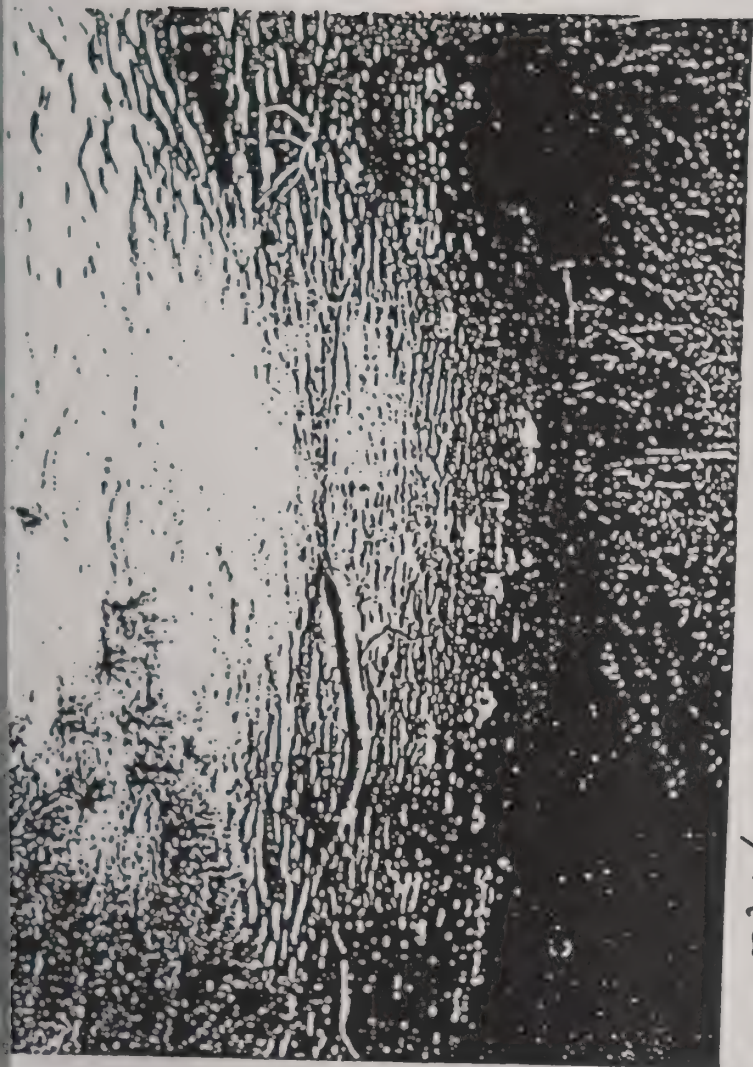
TRACH



side of Tunnel



TREE TRASH IN RIVER



Riverways Programs

AA

Maria Van Dusen, *Riverways Coordinator*
Joan C. Kimball, *Adopt-A-Stream Coordinator*
Russell A. Cohen, *Rivers Advocate*
Karen I. Pelto, *Stream Ecologist*

April 22, 1999

Bob Durand, Secretary
Executive Office of Environmental Affairs, Attn.: MEPA Office
Laura Rome, EOE No. 11865
100 Cambridge Street, 20th floor
Boston, MA 02202

RECEIVED
APR 23 1999
MEPA

EOEA # 11865 Phase I Muddy River Flood Control, Water Quality and Habitat Enhancement.

The staff of the Riverways Program within the Department of Fisheries, Wildlife and Environmental Law Enforcement has reviewed the Environmental Notification Form for the Phase I Muddy River Project. The Riverways Program is pleased the problems of the Muddy River are being examined and addressed. The Muddy River system was designed by Olmsted in 1879, prior to the Charles River Dam and the growth in urbanization. We hope Phase I will lead to a revitalized and functional river system. To this end, we offer the following comments on this document.

According to the narrative there is a desire by the proponents to develop a Master Plan Environmental Impact Report. The creation of a document which looks at the total Muddy River system and has a long range focus is a sound approach and we encourage a process which is open and creative. As part of this methodology, the proponents are asking for a determination on the eligibility of an Area-Wide Review under the Special Review Procedures. While we agree a master plan is in order, we have concerns about some of the timing issues. The Dredge Form, required of the Phase I activities, places the start date for the Phase I dredging projects as the summer of 1999. This does not appear to allow enough time for the development of a thorough and thoroughly reviewed Master Plan, Phase I- DEIR and FEIR a project of the size of Phase I warrants. We sympathize with the desire to begin the project sooner rather than later but not at the cost of careful environmental and citizen review. [The dredging plan should undertake full MEPA review including the preparation of an EIR which examines the environmental impacts of the Phase I projects, reviews Phase I in relation to the entire three phase project, thoroughly investigates the alternatives possible, and considers the cost effectiveness of this tax payer funded initiative.]

Of concern to the staff of the Riverways Program is the complexity and size of this project, the costs, and the expected long term benefits. According to the DEP Dredge Form, it is anticipated the dredging will be a temporary measure and re-dredging will be required in 10-20 years. The Army Corps of Engineers concurs with this assessment of dredging the Muddy River calling it a stopgap measure. It seems wise to institute preventive measures first so the costs and energy required of Phase I, if it is found to be the best alternative, is not repeated in 10 years and presumably every

100 Cambridge Street • Room 1901 • Boston, Massachusetts 02202 (617) 727-1614 x 360
Agency of the Department of Fisheries, Wildlife & Environmental Law Enforcement
David M. Peters, Commissioner

decade there after. The need for aggressive measures to prevent the infilling of the Muddy River are barely mentioned in the ENF beyond *suggesting* street sweeping and catch basin cleaning. If dredging needs to be redone in 10 to 20 years, the \$43.2 million dollar estimate for Phase I is really the cost of Phase I, *part 1*. Addressing the root causes of the problems in the Muddy River watershed should be the first phase of this project.

The dredging of the Muddy River is the major cost in the estimate for Phase I presumably because it will make the greatest difference in the flooding problems associated with the Muddy River. The ENF states but do not substantiate or quantify the gain in flood storage from the proposed dredging. A complete explanation of the expected gains from the dredging work is needed to assess the Phase I proposal. What will be the flood level reductions for various statistical storms and storm intensities such as the 2, 5, 10, 50, and 100 year storms and the 10 year 24 hour storm? Will the decrease in flooding impacts be small and potentially infinitesimal for most of these storm events? If the flood waters will only be lowered a fraction of an inch in the ten year storm, perhaps a more cost effective method for reducing damage could be found such as flood proofing affected buildings, increasing detention areas, reducing direct stormwater discharges in to the river, etc.

A great deal more information is needed about the proposed dredging process. The issues of disposal, disposal site, and dredging methodology are complex given the nature of the sediments involved in this project and may be the most difficult aspect of the proposed Phase I project. Most of the dredge spoils are contaminated and some are even tagged as hazardous. Dewatering poses quite a problem. Will the dewater supernatant be discharged into the river without cleanup? Into the sewer system without pretreatment? Will the dewater liquor be monitored for hazardous and toxic substances? The likelihood of resuspension and mobilization of some undesirable constituents into the dewatered liquor is a concern, too. How will the dewatering site be protected from contamination and what contingency measures will be in place in case of accidents?

The expected improvements in water quality, like many of the dredging issues, are inadequately substantiated in the ENF. The Emerald Necklace Environmental Improvements Plan attributes water quality problems to sluggish flow, CSOs, illegal cross connections and high levels of sediment buildup. How will this project cure all of these ills in the long-term? Given the flow of the river, high water temperatures through much of the year, and the nonpoint source pollutants entering the system, how can the proponent be sure a dissolved oxygen level of 5 mg/l will be consistently attained throughout the system? Won't any gains in water quality gradually wane as the dredging work regresses with the continuing siltation of the river? A decrease in SOD may occur initially but won't this improvement also be lost as new sediments are added during storm events?

Landscaping is a component of Phase I and an even larger part of Phase II. The Muddy River corridor is an important resource for Boston and its origin is born in a desire to protect and manage an "emerald necklace" for the citizens of Massachusetts. The current master plan hopes to follow Olmsted's planting scheme or at least use his recommended plants list. This may not be the wisest approach given the many changes in habitat and environmental quality and fails to recognize the advancements in landscape design since Olmsted's work. The master plan committee should carefully review the landscaping aspect of this project to insure success while being sensitive to the historic facets of the Muddy River parklands. One thing to consider is the planting scheme for the

Jamaica Way. Safety/ line of sight concerns centering on traffic flow on the roadway may interfere with expectations. It is quite probable officials will call for the elimination of trees and shrubs to improve lines of sight but this will do little to promote a park atmosphere in this long section of the river corridor.

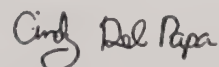
The ENF/Master Plan's response to the *Phragmites* problem overwhelming much of the project area is cavalier given the invasive nature of this plant species. It is quite likely the alterations proposed in Phase I will result in a net gain in *Phragmites*. Far more investigation is warranted if successful elimination of this invasive is to occur in the project area.

The elements of the master plan found in Appendix 4 offers intriguing possibilities for the future of this section of the Emerald Necklace. We look forward to seeing expanded descriptions and plans for these improvements. We hope a very few reflections about some of the listed improvements may be helpful in the future planning work. The work within Franklin Park will effect a large user population given the significance of this open space for the surrounding communities. Small details like the bridge over Scarboro Pond, slated to accommodate golf carts and pedestrians, needs careful consideration. Can golf carts and pedestrians safely co-exist? Is the bridge just for golf course patrons? What will the bridge mean for the aesthetics of the pond and surrounding areas?

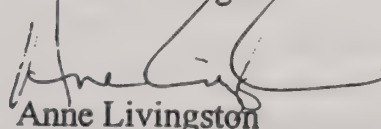
Scarboro Pond suffers from eutrophication due in part from adjacent golf course. The resurrection of Abbottspool is quite commendable but won't using it for stormwater management result in the same eutrophication problem for this new water resource? Has there been any thought to using the collected runoff for golf course watering needs producing a dual benefit? The time line concerning Leveret pond is not in order. Was the pond dredged? What does the description for 1980 mean? What dredge project are they referring to in the narrative? Why is there a problem with runoff from the ball fields in Daisy Field? Shouldn't ball fields have minimal runoff considering they are pervious, mostly vegetated and of an even topography? Why stabilize the pond edge with riprap -- why not use vegetation and bio engineering to stabilize the edge? Many more similar, small but important details must find room in the master plan proposed to avoid costly missteps, inappropriate or detrimental actions, and a holistic approach to solving problems in the long term.

The Riverways Program staff appreciates this opportunity to comment on the Muddy River ENF. The master plan and the future of the Muddy River-Emerald Necklace will benefit from a broad spectrum of participants in the development and review stage. We look forward to being a component of this process and continued involvement on the Charles River Watershed Team.

Sincerely,



Cindy Del Papa
Stream Ecologist



Anne Livingston
Urban Rivers Coordinator

RUBIN AND RUDMAN LLP

COUNSELLORS AT LAW

50 ROWES WHARF • BOSTON, MASSACHUSETTS 02110-3319

TELEPHONE: (617) 330-7000 • FACSIMILE: (617) 439-9556 • EMAIL: FIRM@RUBINRUDMAN.COM

BB

Myrna Putziger

Direct Dial: (617) 330-7042

February 26, 1999

RECEIVED

FEB 26 1999

MEPA

Bob Durand, Secretary
Executive Office of Environmental Affairs, Attention MEPA Unit
Laura Rome, EOEA No. 11865
100 Cambridge Street - 20th Floor
Boston, Massachusetts 02202

Re: Environmental Notification Form ("ENF") for Emerald Necklace Environmental Improvements Master Plan & Phase I Muddy River Flood Control, Water Quality and Habitat Enhancement (the "Project"), EOEA No. 11865

Dear Secretary Durand:

This comment on the above referenced ENF is submitted on behalf of Abbey Landmark Owner LLP and its affiliates ("Abbey"), owner and redeveloper of the Landmark Center (formerly the Sears Building) at the intersection of Park Drive and Brookline Avenue in Boston, Massachusetts. Abbey is currently engaged in the substantial rehabilitation of the Landmark Center to transform that long dormant building into an office, retail and cinema complex.

The very first public benefit resulting from the undertaking of the Landmark Center project was the conveyance by Abbey to the City of Boston of the parcel of land (the "Emerald Necklace Parcel") which was the "missing link" in the Emerald Necklace, land which had been a parking lot for Sears and thereafter a commercial parking lot. That conveyance had long been sought by the City, the neighborhood, and all those who treasure the Olmsted park system.

The Project described in the ENF is the restoration of portions of the Emerald Necklace park system and the Muddy River over a 15-year period. The ENF proposes to use the Emerald Necklace Parcel as a staging and lay down area for improvements in other parts of the park for the 15-year duration of the Project.

The Emerald Necklace Parcel is the front door of Landmark Center. While my client was committed to returning the Emerald Necklace Parcel to the park system, that commitment was on the condition that the Emerald Necklace Parcel would be used only as a park and that no incompatible activities would be conducted at the entrance to their a multi-million dollar

Bob Durand, Secretary

February 26, 1999

Page 2

undertaking. To assure that this condition would be fulfilled, the conveyance to the City imposed the following restriction on the Emerald Necklace Parcel:

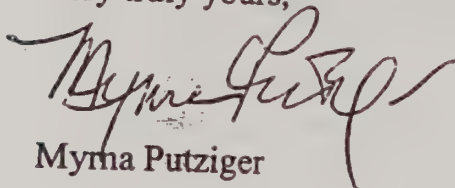
The premises granted herein are conveyed subject to a restriction for the benefit of the remaining land of the Grantor described on Exhibit A annexed hereto and incorporated herein by this reference, and for the public benefit, that the granted premises shall be used only as a public park. In amplification and not in limitation of such restriction, the granted premises are conveyed for the purpose of restoring the same to the so-called "Emerald Necklace" park system originally laid out by Frederick Law Olmsted, a City of Boston Landmark as designated by the Boston Landmarks Commission on October 24, 1989, and to such end no roads, signs, billboards or other advertising shall be constructed or placed on or above ground, and no surface use shall be made of the granted premises except for outdoor recreational purposes.

The restriction is both a public and a private restriction, the private restriction being for the benefit of the Landmark Center parcel. As the restriction provides, the only use that may be made of the Emerald Necklace Parcel is as a public park, but more specifically *"no surface use shall be made of the granted premises except for outdoor recreational purposes."*

As is clear from the cited language of the restriction, use of the Emerald Necklace Parcel for staging and lay down is prohibited. The Project proponent must find other land to use for these purposes.

Accordingly, the Scope for study of the impacts of the Project should direct the Project proponent to eliminate the Emerald Necklace Parcel from its planning, identify areas for staging and lay down which are available for such use, and study the impacts of using such other areas.

Very truly yours,



Myrna Putziger

MP/mlh

cc: Commissioner Justine Liff
Mr. Robert Epstein
Mr. David Epstein

THE EMERALD NECKLACE
Conservancy

Old City Hall, 45 School Street, Boston, MA 02108 • (617) 722-9823

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APR 22 1999

YR

MEPA

April 21, 1999

CC

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Mr. Robert A. Durand, Secretary
MA Executive Office of Environmental Affairs
100 Cambridge Street (20th floor)
Boston, MA 02108

Dear Secretary Durand:

On behalf of The Emerald Necklace Conservancy, I want to commend your office for moving forward the initiative to restore the Muddy River and return it as a clean waterway for enjoyment by the citizens of Massachusetts. As you know, the Conservancy is a public-private partnership whose mission is to "restore, preserve, maintain, and promote the landscape and waterways of the Emerald Necklace -- stretching from Franklin Park to the Back Bay Fens -- as special places for people to visit and enjoy."

We strongly support the proposed work described in "The Emerald Necklace Environmental Improvements Master Plan-Phase I-Environmental Notification Form" as the clean-up of the Muddy River, along with its bank-to-bank restoration, is a critical step in the long-term restoration of the Emerald Necklace park system. Given the historic landscape and the built-up watershed area surrounding the Muddy River, the project calls for special creativity and innovation in its implementation.

While we ask that you move forward expeditiously to make restoration of the Muddy River a reality, we recommend that the proponents consider the following in the EIR:

(1) We concur that facilitating the water flow in the Charlesgate area should be the first project priority. However, with numerous privately-proposed developments in the Fenway area which will commence over the next several years, "daylighting" the river at the old Sears parking lot should be the next priority in terms of project sequencing. Brookline and the MBTA lack flood protection until this occurs. In addition, the Sears lot should not be utilized as a staging area. This area of the Muddy River should become an improved, open waterway as soon as possible.

(2) Sediment source reduction/controls along the entire waterway should be a priority. The project proponents should be aggressive in

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establishing a MOA, which commits the necessary resources to reduce or eliminate sediment loadings, and that "best management practices" are used in the implementation of this item.

(3) Given the national significance of the historic landscape surrounding the Muddy River, maintenance of the integrity of existing trees and species where any work is done will be critical. The goal should be no loss of trees and no soil compaction on or near trees. In addition, key trees and areas should be identified, boundaries should be established to the drip-line of the canopy, and root lines identified prior to staging and related work.

(4) The Conservancy supports dredging of the Muddy River but asks that the proponents explore creative methods in order to minimize dredging impacts and dredging that has the least risk of sediment impacts to the Charles River given on-going efforts to clean-up that waterway. The involvement of the engineering and related departments of the internationally-recognized educational institutions in the greater Boston area and in close proximity to the Muddy River should be explored in this regard.

(5) The Muddy River should be returned to its original banks as designed by Frederick Law Olmsted; ie., we support full dredging and efforts to deepen the river in order to improve its hydrology.

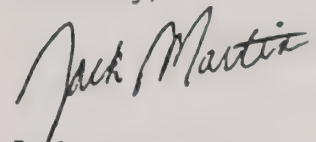
(6) As this will be a complex and lengthy project, we suggest that an area or several area(s) along the river be built and established as "models" of bank stabilization, conduits and the like so that the public can see and comment on the scope of work to be accomplished.

Finally, we applaud your efforts to extend this first comment period to 60-days and suggest that this comment period length be used for the project's duration in order to give interested community, residential and other groups an opportunity to fully study the requirements and implementation of this complex undertaking.

The spirit of innovation and the vision which created the Emerald Necklace and its waterparks/riverways should be what we aspire to in the implementation of "The Emerald Necklace Environmental Improvements Master Plan." This vision saw the different waterparks of the Necklace connected as a whole, and was one which encouraged a range of recreational uses. We will have failed in our efforts if at the project's conclusion we fail to bring people near and onto the water or to become invested in the need for a clean riverway. On behalf of The Emerald Necklace Conservancy, I want to pledge our support of the

Commonwealth's and municipalities' efforts to restore an urban
environmental treasure.

Sincerely,

A handwritten signature in dark ink, appearing to read "Jack Martin". The signature is fluid and cursive, with the first name "Jack" and last name "Martin" clearly distinguishable.

Jack A. Martin
President

Cc: Mayor Thomas Menino, City of Boston
Joseph Geller, Chair, Board of Selectmen, Town of Brookline
Justine Liff, Commissioner, Boston Parks Department
Thomas DeMaio, Commissioner, DPW, Town of Brookline

EMERALD NECKLACE CITIZENS ADVISORY COMMITTEE

August 17, 2001

Justine P. Liff, Commissioner
City of Boston Parks and Recreation Department
Brookline Department of Public Works
1010 Massachusetts Avenue
Boston, Massachusetts 02118

Thomas DeMaio, Commissioner
Department of Public Works
Brookline Town Hall
333 Washington Street
Brookline, MA 02245

RE: Emerald Necklace Environmental Improvements Master Plan and Phase I Muddy
River Flood Control, Water Quality, and Habitat Enhancement (the "Project")
EOEA No. 11865
Comments on Preliminary Draft Environmental Impact Report

Dear Commissioners Liff and DeMaio:

As you know, the Citizens Advisory Committee ("CAC"), appointed by Secretary of Environmental Affairs Bob Durand to assist in the review of the Project, has carefully and intently studied a preliminary Draft Environmental Impact Report at its frequent meetings over the last several months. The Citizens Advisory Committee appreciates the proponents' efforts to address the concerns which the CAC has expressed at these meetings. In particular, the CAC is most receptive to the recent modifications which the proponents' made to the Vision Statement, and their willingness to secure two sub-consultants to provide independent advice regarding maintenance and management of this historic landscape.

The CAC wishes to provide to the proponents and their consultants written guidance which identifies what it believes to be the major issues which need to be addressed, in order to ensure the long-term success of the Project and the rehabilitation of the Emerald Necklace Park system as a whole, along with specific comments on various portions of the Draft Report.

The critical issues are identified in the remainder of this letter and the more specific comments are included in nine attachments, eight of which refer to the identified specific sections of the Draft Report, and the last of which has been identified as Parking Lot Issues, since the best place to include them was not apparent: Revised Executive Summary, Project Alternatives (Section 2), Project Description (Section 5, Appendix 1), Project Impacts and Mitigation (Sections 6, 7, and 9), Best Management Practices (Section 2.5), Best Management Practices for Stormwater Runoff (Section 5.7), Management and Maintenance Plan (Section 8), Funding (Section 10), and Parking Lot Issues. The enclosed comments on the Executive Summary provide a concise summary of the major points set forth in more detail in the individual section comments. It should be noted that the CAC has not studied the many Appendices to the Report.

1. Project Area. This issue seems to have dogged the project and its review from the start. A project map with clear delineation of existing owners of both project areas (City of Boston, MDC, Town of Brookline, etc.) and abutting properties (with special emphasis on institutional and corporate abutters) should be created and incorporated into the DEIR. A history of ownership would also be useful – perhaps this can be lifted from the Emerald Necklace Master Plan.
2. Scope of the Project. There has been lengthy discussion and continued confusion about the specific scope of the project and its future phases. The CAC is concerned that this confusion, if continued, will affect the public's perception of the project and the ultimate success of its intended or anticipated goals. Funding agencies, the state and federal government will also need to know that the public understands that the entire park, and or the pathways, upland banks and glades will not be included or funded in this specific *flood control/water quality/habitat enhancement* project. A clear explanation of the differences between: a) Olmsted Parks/Emerald Necklace Masterplan goals, b) the project as described in the Secretary's Certificate(s), and c) Muddy River Restoration project boundaries and scope should be created to eliminate the existing ambiguity and should be included in the DEIR.
3. Historic Resource Protection. Major attention should be given to historic interpretation of the work which will be done. While this is to a large extent an engineering project, the historic and environmental implications are enormous. The historic resources section of the DEIR should be expanded in substance and strengthened in tone.

The EIR must be clear that this is a rehabilitation project. Rehabilitation is the treatment of choice when substantial repair work is done which will retain both the historic character and contemporary use of an historic space.

The distinction between primary and secondary periods of significance is obscure and these words should be avoided. Rather language should be inserted in the appropriate area that states, for example, "rehabilitation work will reestablish the historic character of the 1890's era."

The historic resources under Section 6 should not be limited to built features, but should also include landscape features such as vegetation and grading, which are part of the historic fabric of the parks to be improved. The CAC recommends that an assessment and evaluation be made of the health of existing vegetation within the limits of the work (giving due respect to heritage trees and plantings) to determine its life span and whether timely removal of an obviously declining tree or shrub mass might be necessary during construction.

In addition, the EIR should state how new as well as mature trees and established plantings will be protected during construction (around Fenbridge, for example).

4. Maintenance. In order to ensure that the capital investment and environmental improvements which the project represents are not squandered in the future by failure to properly maintain and manage the park areas rehabilitated by the project,

the DEIR must provide as much detail as possible regarding the management and maintenance program which will be implemented prior to, and upon completion of the various capital improvements.

The CAC strongly endorses, and would like to restate for the record, what Frederick Law Olmsted wrote in 1873:

“The Park Commissioners are trustees and managers for the whole body of owners of a large amount of public property. Their business is of two kinds; that of forming parks [and] that of keeping them. The second is the graver responsibility. The Commissioners are to be holden to a stricter account if the arrangements they make for it are ill judged or if they delegate it to faithless or indifferent agents.”

Secretary Durand has clearly recognized Olmsted’s wisdom, and the importance of this issue, for his April 29, 1999 Certificate on the Environmental Notification Form imposes upon the proponents clear and specific requirements with respect to a management and maintenance plan. The Certificate specifically requires the proponents to include in the EIR

“a comprehensive maintenance management plan to be implemented by Boston and Brookline throughout the watershed of the Muddy River to ensure continuing effectiveness of any stormwater or water quality improvement measures and prevent new siltation, and it should specifically identify funding sources for ongoing, long-term implementation of the maintenance plan.”

It further requires that

“to ensure that the capital investment is protected, the EIR should describe in detail the proponent’s maintenance and management plan for maintaining the restored condition of the Muddy River and the Emerald Necklace parks...It should include commitments to maintain the restored historic landscape and structures. It should include protocols for regular monitoring of environmental conditions to provide a continuous feed-back loop by which the effectiveness of management practices can be measured. Finally, it should define the proportional financial responsibilities of the City of Boston and the Town of Brookline for all short-term and long-term maintenance and monitoring measures related to the project.”

The Memorandum of Understanding effective as of November 4, 1999 by and among the City of Boston, the Town of Brookline, the Executive Office of Environmental Affairs, and others also contains in Paragraph 5 the recognition of these two municipalities that an appropriate maintenance and management plan will be submitted jointly to the Secretary of Environmental Affairs and reviewed as a part of the review for adequacy of the environmental impact report.

As currently drafted, Section 8, does not begin to satisfy the obligations imposed by the Certificate or the Memorandum of Understanding. It does not provide a realistic description of prospective maintenance needs or a sufficient plan for how those needs will be met. There is a strong consensus that before maintenance can be adequately addressed in the DEIR, there needs to be a full study of required staffing levels, training needs of that staff, resources, costs, special needs of historic landscapes and other issues critical to the successful maintenance of an historic Olmsted park.

The CAC has requested that a consultant be hired to advise it in this regard. The proponents have responded positively and it is the hope of the CAC that the report of Tim Marshall and Clarissa Rowe will provide the substance for an appropriate management and maintenance plan to be included in the DEIR. Information gathered from the Arnold Arboretum and the Trustees for Reservations as to how they manage their natural resources should be a part of the consultants' analysis.

The CAC also recommends that the rewritten section include a table describing the acreage of turf, trees, water, playfields, and other amenities, the current level of staffing and the desired level of staffing based on research from the consultant and similar fully staffed historic urban parks of the same size and landscape complexity in a similar climate. The section should explain how the parks should look in the professional mind of the proponents, and should clearly delineate the costs under current union wage scales of a fully staffed maintenance division for the Emerald Necklace with the optimum staffing level. Richard Heath has written several letters on management and maintenance, and a copy of his comments on this section of the report are enclosed.

5. Funding. The CAC strongly believes that the two municipalities that are the proponents need to clearly identify in the DEIR their commitments to the funding of both the capital outlay and long term maintenance and management portions of the project. Budgets should be established now, which will support the funding required. Without specific budgets, the proponents cannot commit to take specific actions. Political considerations should be addressed, and mechanisms should be put in place now to ensure dedicated revenues for the parks being improved. The CAC supports practical cost savings incentives for innovative approaches to construction but not at the expense of environmental regulations and the conservation of historic resources.
6. Management. The CAC would like to state that past and current management of the resource has been woefully insufficient and damaging to the park system. The CAC has strong doubts about the efficiency of committee management and annual reporting as recommended in the draft DEIR. The DEIR should explain how multiple agencies that have separate and independent legal jurisdictions over the Necklace parks could be made more efficient and accountable to the Necklace as a whole or their artificial boundary lines erased altogether.

The CAC discussed at length whether an independent Emerald Necklace Administration should be established for this purpose. Numerous references to

these discussions are contained throughout the enclosed section comment statements. While there is not currently unanimity as to the best way to address this issue, there is a uniform commitment, as indicated in the next paragraph, that the CAC should have a continuing role in this regard.

In the meantime, the CAC recommends the study of several possible alternatives to ensure unified management, including:

- Special legislation creating a separate Emerald Necklace Administration
- An Emerald Necklace Authority
- A non-profit partnership with the proponents
- A more detailed MOU with specific commitments from the municipalities and an enforcement mechanism

The CAC anticipates and would like to work with the Secretary in guaranteeing that a proper management structure, which can ensure the preservation of the environmental improvements proposed, is in place *before* permits are issued to proceed.

7. The CAC Role. The role of the CAC should be sustained throughout the life of this and future phase(s) of the project, including the planning, design, construction, and management phases. At the very least the CAC expects to remain intact as a staffed and funded monitor of the project through design and construction. Site visits to inspect progress should be an integral part of a regular meeting schedule.

The CAC endorses its role to act as an ombudsman throughout the life of the capital project, and in the implementation of the maintenance program, as well. Project proponents should provide quarterly updates to the CAC or their consultants and two public meetings should be held. The first public meeting should be held at the time of the release of the “annual” update at year-end. The second public meeting should be held within a month or two after, for the CAC to formulate a response to the proponents using input from the public as a guide. Additionally, a process for public representation, including but not limited to issues of substitution, replacement, removal, and adaptability to the formation of future constituent groups should be clearly established. The existing CAC is a good start as appointed, but a more formal and regularly maintained check on this public “balance of power” should be created and codified for all parties.

8. Enforcement. The multiple jurisdictions that overlay the Emerald Necklace hobble its current maintenance and management, particularly with respect to the parkways. The preliminary DEIR does not explain how the maintenance requirements with respect to the project areas will be enforced given those multiple jurisdictions. The CAC (and we believe the public) wants assurance that the maintenance requirements set forth in the DEIR will be commitments of the Town of Brookline, the City of Boston and the Metropolitan District Commission, and are legally enforceable.

The CAC has also requested clarification on what recourse is available to the Secretary to impound funds or otherwise penalize the proponents if they fail to comply with their obligations to maintain this \$91 million project for three parks in the Emerald Necklace, the largest capital project for any park in the history of Boston and Brookline.

In summary, we hope that the proponents find this letter and the enclosed section comments useful in preparing the DEIR which will be submitted to the Secretary. The CAC will have further comments when it reviews the DEIR, and by that time, it is hoped that some of the still ambiguous issues which we fear could defeat the proponents' goals will have been resolved.

Thank you.

By: _____
Frances Allou Gershwin

By: _____
Richard Heath

On behalf of themselves and the other Members of the Emerald Necklace Citizens Advisory Committee:

Kathy Baskin, Charles River Watershed Association
Charles Alan Birnbaum, National Park Service
Edward Burke
Isabella M. Callanan, Friends of the Muddy River
Suzanne Comtois, Fenway Community Development Corporation
Christine Cooper, Jamaica Pond Project
Edward Cutler, Ph.D.
Margaret Dyson, Historic Massachusetts, Inc.
Alan Goodman, The Abbey Group
George Hagerty, Fenway Studios, Inc.
June Hatfield
Gary R. Hilderbrand
Adam Kahn, Brookline Conservation Commission
Frances J. Kemp
John Leahy
Arleyn A. Levee, National Association for Olmsted Parks
Arlene Mattison, Emerald Necklace Conservancy
Hugh Mattison, Friends of Leverett Pond
Lauren Meier
Paul Mentag, Fenway Alliance
Jane Pfister
George Proakis
Marion Sabal, Fenway Garden Society
Joyce Starner, Symphony United Neighbors
Fredericka Veikley, Fenway Civic Association
Eileen Woodford, National Parks & Conservation Association

cc: Stan Ivan, Chief Engineer, Boston Parks and Recreation Department
Erin Chute, Brookline Director of Parks and Open Space
John Burckardt, Parsons Brinckerhoff, c/o Boston Parks and Recreation Department,
Bruce Conklin, PE, Camp, Dresser and McKee, Inc
Samantha Overton Bussel, Deputy Commissioner for Policy, Metropolitan District
Commission
John Sullivan, Chief Engineer, Boston Water and Sewer
Laura Rome, Executive Office of Environmental Affairs
Betsy Shure-Gross, Executive Office of Environmental Affairs
Mark Smith, Executive Office of Environmental Affairs
Richard Thibodeau, Chief Planner, Executive Office of Environmental Affairs

#74525

Comments on **Revised Draft of Executive Summary**
Emerald Necklace Citizens Advisory Committee (CAC)

July 16, 2001

Note: The Proponent(s) and CDM have substantially reworked the Vision Statement and Executive Summary with regard to the previous draft comments. Please refer to "DRAFT Vision Statement, N.D." & "Muddy River Executive Summary, Revised Outline (partial), May 24, 2001" for specifics. Major draft comment themes are repeated below, with changes to date summarized in *italics* and areas that still need work underlined.

GENERAL COMMENTS

Vision Statement

The Vision Statement should be a statement of the goals and philosophy of the project and "set the stage." *The vision statement is now a stand-alone document that has also been substantially rewritten. This document will precede the Executive Summary.*

Relationship with Emerald Necklace Master Plan

Need to more clearly explain the relationship between this project and Emerald Necklace Master Plan. *This material has been added as requested – is this enough explanation? There is continued concern about project scope vis-à-vis Secretary's Certificates.*

Project Objectives

The Executive Summary needs to tie in the project objectives and explain why alternatives, options, approaches are desirable or recommended. *See 'Solving Problems' section of new Summary. Additionally, references throughout the ES will point the reader to corresponding report sections for details. Graphics and tables of screened alternatives and preferred options are now included.*

Style/Presentation

Text should be presented in such a way as to capture the diverse readership with more "punch" and "passion." *Revised ES will include many pull quotes, style boxes and graphics.*

The Executive Summary needs to be written to reflect a stronger and more accurate representation of the project as it was presented by the consultants.

All passive or subjective verbs should be changed to active tenses. The sense of inevitability and certainty with which the consultant delivered numerous presentations to the CAC needs to be present in the Executive Summary, and the document as a whole.

The CAC recommends the use of a professional editor. This has been accomplished. The tone seems clearer and more directed.

The ES should be illustrated. This has been accomplished. Do the maps consistently make clear the areas, boundaries, scope of work being referenced in text? Will they/should they be colored? Example: Riverway and Olmsted Park project area maps (USGS) in new ES seem to be confused by contours and structures – the river or park is lost.

There should be two additional maps: one delineating the project area and the other the entire Emerald Necklace Park system. These maps need to be more graphically readable to the non-technical reader. These maps have been added. Are these maps now too simplified – especially the Emerald Necklace map? Should these maps be full-page or fold-out so that they will have enough specific information to orient the reader as well as pack more "punch" and allow the reader to begin to 'enter' the park and project areas (understanding these are different maps than the large format appendix maps with their requisite technical notations)? Should these maps be adjacent to each other to help the reader understand the boundaries of the total park system and the limits of the Phase 1 improvements – perhaps an overlay? This jurisdictional/boundary/scope of work issue is still causing concern and or confusion for the CAC and it would be assumed the public as well.

Public Relations

The CAC recommends that the proponents commission a separate advocacy/marketing brochure derived from the Vision Statement and Executive Summary for wide public distribution. This has not been funded or addressed. Much as the proponents have gone outside the existing consultant team with respect to a Maintenance and Management sub-consultant, perhaps the new ES editor can provide a starting point for discussions with a professional designer to create a simple brochure from the newly reworked ES. The proponents should engage in a dialogue with the Emerald Necklace Conservancy on this issue.

SPECIFIC COMMENTS

1.0 Overview

Check accuracy of dates and confirm or clarify terms. Document claims for certain usage or discard if non-supportable. Have term searches "restoration," "rehabilitation," etc. been performed to unify document? The terms need to be consistent with the terms as they are defined by the National Park Service. Has glossary been created, and referenced throughout the ES (the first place many terms will be encountered)?

2.0 Project Alternatives

Maps need to present referenced information clearly to the reader. See comments on illustrations above.

Alternatives should be clearly explained and the best combination of alternatives made plain to the reader. This has been addressed with the rewrite and addition of screening tables. Members of the CAC expressed concern that this section lacked a clear conclusion. MEPA process norms suggest that this section illustrate all of the project alternatives and their analysis in a straightforward and non-biased format. Project Analysis writer recommended that the CAC focus on the substantive content portions of this section and trust that the presentation is appropriate to the intended audience. Do these comments hold true for the rewritten ES?

Define restoration, rehabilitation and choose the correct term for this project. See comments above re Overview. Consider avoiding the terms "primary and secondary periods of significance." The new ES uses "historical significance" and notes dates.

3.0 Public/Agency Involvement

New ES reiterates MEPA process, summarizes regulatory requirements. A flow chart is suggested as an aid? List of permits required is added. Should public comment phases or other pertinent statutory regulations be made clear to the reader so that they understand their ongoing role in oversight through, and in concert with, public agencies?

4.0 Existing Conditions

Are the "Physical Features" and existing conditions as described in the new ES sufficient or now too brief?

5.0 Project Design and Construction

Need to tie back to project objectives. Screening tables have been added.

A goal of the project is to reduce sediment loads by another 30%. The CAC was reluctant to set a higher goal, which would be desirable considering the effort and expense going into this project, and decided to request further information from the engineers to understand better the implications of asking for further reductions of sediment loads. Suggest making reference to the Emerald Necklace Master Plan and Olmsted's original design. The CAC recommends further explanation of the actual physical changes needed to achieve the 30% and support for arriving at this figure. For example, what would the cost of each change be, and how much would it reduce sediment loads.

BMPs are weak. BMPs tend to be focused on water quality but not the other four project objectives. EMP consultant report should be referenced when completed.

Insert paragraph about the initiation of public processes in future for park restoration beyond the existing project. MDC and City of Boston should create new CAC that begins public process for the parts of the park(s) not addressed by this flood control/water quality project. The proponent should work with CAC to come up with a process that involves MDC and other appropriate agencies or entities.

A public education component including informative signage and descriptions of systems and equipment used at project sites should be created, funded and implemented throughout the various phases of the project (Parking Lot issue).

6.0 Assessment of Impacts

Describe two-year post planting maintenance plan. Discussion focused on the issue that a maintenance plan may be inadequate before vegetation is established.

Historic resources are not just built features but are also landscape features and include the whole character of the landscape: grading, plantings, and structures.

Historic character has been compromised by the construction of the Bowker overpass, however, there are several historic features remaining, such as grading, significant trees and defined spatial relationships.

All traffic sections, want description of traffic and noise impact of construction.

7.0 Environmental Mitigation

8.0 Management and Maintenance Plan

The EMP sub-consultant report needs to be referenced here. This section is still in process and cannot be adequately addressed in the ES until finished.

CAC continues to suggest idea of a centralized administration of the park e.g. a separate authority that has the funding, responsibility and accountability to oversee park maintenance and management. This should be reviewed/referenced in EMP report when finished.

Section 2.5.2 figure 2-40, Add this pie chart to the ES to emphasize that 85% of urban runoff is related to maintenance. Create a separate chart that shows just maintenance.

MDC to provide information on jurisdiction and accountability of MDC

9.0 Regulatory Requirements

Secretary is looking for a pathway for protecting the resource of the Muddy River. CAC can help the Secretary convince the national government and other entities to fund this project.

CAC suggests modification of the Secretarial Certificate from CAC annual updates to quarterly updates with access and meetings with proponents and an independent advisory role for management and maintenance throughout the year.

10.0 Funding Strategy.

Should clearly reflect how much funding can realistically be secured from various funding sources. The CAC is very concerned that the proponents will create a segmented project. DEIR needs to include the proponents' plan for how all necessary funding (both capital and maintenance) can be achieved.

Clearly identify which funding sources the proponents are actively pursuing. The proponents should list themselves as a funding source.

The proponents need to strengthen the public/private partnership model: currently limit partnerships to connections between institutions and the Boston Parks and Recreation Department

Outline legislative strategy similar to that pursued on the Federal, congressional level.

Prepared by George Hagerty

#74617

May 16, 2001

GENERAL COMMENTS

It is our understanding that pursuant to MEPA guidelines, the purpose of this Section is to illustrate all of the project alternatives and provide a summary analysis of each in a straight forward and non biased format, rather than to indicate any conclusion of the proponents as to the preferred alternative. Therefore the CAC focuses here on the substantive content portions of this section.

SPECIFIC COMMENTS

Flood Control

2.1.5 - Given the invasiveness of the *Phragmites*, it should be clearly stated that the dredging should include root mass removal in order to prevent a reoccurrence of the plant material. Writer's comment – is this necessary given the language on page 2-39 last paragraph? I believe that the last 5 bullets under this section are rendered moot relative to the MEPA format approach described above.

BMP'S

2.3.7 Explain in more detail the plans for daylighting the culvert between Willow Pond and Leverett Pond or otherwise restoring flow to the Babbling Brook. Also include discussion of plans for both upper and lower sections of Babbling Brook. Need to reference Master Plan and Brookline's CIP.

P. 2-96 , 2.5.2.4 Language should be stronger regarding illegal connections. Reference relevant laws; the proponents should provide details how they are addressing this problem. Include on what has been done up to date. In the second paragraph of this section change "was considered a BMB" to "is" considered a BMP

P. 2-97, 2.5.2.6 First part of section is inaccurate, should include responsibilities of all proponents and other responsible parties, in the form of list/chart. Within actions, "should" vs. "is" needs to be clarified

2.5.2.5 Hazardous waste and paint recycling collection locations should to be more targeted to areas close to the Muddy River; also the frequency of collection days should be raised.

2.5.2.2 Catchbasin Stenciling – The second paragraph is inaccurate. The municipalities have not demonstrated activity on a catchbasin stenciling program. This reality should be made clear.

Table 2.2, p. 6 of 6, Chart implies that MDC cleans catchbasins daily after grass season, P. 2-95 2.5.2.1, This page states MDC does not have formal program. Inconsistent statements between table and text.

CAC is seeking accuracy and presentation clarity on current BMP activity by Brookline, Boston and the MDC. Also seeking clarity on respective responsibilities and coordinated effort where impacts overlap in multi-jurisdictional areas.

Table 2-3, needs to clarify visually the preferred alternatives and the degree to which they meet project objectives. Clarify what Bold text means; we recommend an insertion of a few how-to sentences to help the reader use this valuable table.

Prepared by Paul Mentag

#74459

Comments on **Project Description (Section 5, Appendix I)**
Emerald Necklace Citizens Advisory Committee (CAC)

May 7, 2001

General Comments

1. This is a rehabilitation, not a restoration, project - retaining remaining historic significance according to historic documentation. It is not possible to restore the river. Different conditions exist today that make a restoration not possible. Change wording in the document accordingly and use that wording consistently throughout the document.
2. The document needs a glossary. **The terms need to be consistent with the terms as they are defined by the National Park Service.** If the term is just a one or two word explanation, it could be added within the document.
3. **The project needs to be more clearly defined.** This is part of a larger Emerald Necklace project. But, there are enormous parts of the rehabilitation that will not be done until there is a larger project in the future. It would be helpful to make a list of future priorities, which have the biggest impact on the project.
4. **This project has its limits and only applies to certain areas.** Limit lines are in DEIR. The document needs to communicate more clearly the boundaries and scope of work. Cost containment is a major contributor to the scope of this project. The ongoing management and maintenance pieces can cover broader scope.

Section Five: Project Design and Construction

- 5.1 on p. 5-2, Charlesgate "installation of new park benches" **and trash cans.**
- 5.1.5, Insert a paragraph about the initiation of public processes in future for park restoration beyond the existing project. MDC and City of Boston should create new CAC that begins public process that hasn't yet been done. The prior Charlesgate Charette (Community Outreach Group) would be incorporated into the process. Any such process also needs to be conscious of the future restoration of the Bowker overpass. The proponent should work with CAC to come up with a process that involves MDC and other appropriate agencies or entities.
- 5.1.1 Page 5-2 Consultants should include incentives to contractor to lower costs on dredging disposal. The document can include a statement regarding incentives for reducing costs in the EIR. Cost savings need to

CAC Draft DEIR Comments
Project Description

be balanced against environmental and historical concerns, as well as legal and practical operations. As part of contract documents “best management practices” are routinely included.

- The CAC supports environmentally sensitive cost-savings incentives for innovative approaches to construction methodologies.
- P. 5-7, Section 5.1.5, third paragraph – Define/clarify “in-kind”. Addition - “certified arborist and professionally trained horticulturists.”
- Figure 5.4 The shading key for the *Phragmites* on the south side of Agassiz Bridge dropped out on the printing. Boundaries are there but shading isn’t.
- 5.2.2, P. 5-13 Signify the importance of “day-lighting” in this area. Add some history of the public process which sets the stage for the work. Describe new legislation.
- Louis Pasteur is also known as Higginson Circle.
- Include description and discussion about removing the “jug handle” and its benefits to the project as presented in Boston Transportation Dept. public processes.
- 5.2 Back Bay Fens. Describe how long it will take to replant after removal of staging area? Should define schedule for replanting in all sections of the river.
- 5.2.2.1 This section states there will be new pedestrian and bike pathways constructed to connect to other sections of park. The proponents should consider adding improvement to street crossings for bike path.
- 5.2.5 P. 5-21 Rehabilitation planting must conform to standard horticultural practices. Clarify that this includes aeration and soil conditioning.
- 5.2.7 State clearly how long-term maintenance will be a part of the consideration when choosing from the Olmsted palette of plants.
- 5.4.2 Explain “work in this area (Olmsted Park) can proceed independently of infrastructure work on the project.”
- 5.4 .4 Leverett Pond area is described as having integrity from the Primary Period of Significance. And information is available “to recover the effect that Olmsted intended and that is documented in historic photographs”. Since Olmsted’s intent for rural scenery was a quiet enjoyment and a tranquil, restful, and soothing effect; provide specifics as to how this rolling meadow will be rehabilitated with the presence of the

re-orientation of the Daisy Field backstop and playing fields and stands. Explain the proposed viewsheds and plantings and how they relate to the Olmsted design and intent.

- What plants will be used for "turf covered banks? Are there any that are less attractive to geese, which could be included?
- P. 5-49 "In Olmsted Park there are three islands." "...The goal will be to disturb the two larger island as little as possible..." There is a need to stabilize the shorelines of the two larger islands, and this should be stated explicitly.
- 5.5.2 "Dredging in Willow Pond is justified principally as historic restoration," Water quality is a major factor at Willow Pond. Outflow from the Chestnut Street Drain has caused oil to leak into Willow Pond, thereby creating oil-polluted sediment.

Prepared by Arlene Mattison

#74460

Comments on **Project Impacts & Mitigation (Sections 6, 7, & 9)**
Emerald Necklace Citizens Advisory Committee (CAC)

May 22, 2001

Preface:

The CAC offers the following comments to assist the proponents in improving the DEIR.

Section 6: Assessment of Impact/Environmental Consequences

- Section 6.1, installation of new park benches - add "and waste barrels". (*this insertion should be included throughout the section as appropriate).
- Section 6.1, In addition to evaluation of health of trees and shrubs in the area should be some, focus on the removal of dead trees.
- Section 6.1.1.3, first paragraph second sentence, clarify and reorder sentence.
- General comment: Repetition of sentences about fecal coliform count means you don't know which sections of the river are better or worse and which sections have a standard problem. If there is a reference to a table or appendix that has the information, include the reference.
- Section 6.1.2.1, last paragraph, add requirement of preparation of the soil, e.g. aeration and tilling in advance of sodding and seeding and restoring landscape. Describe site preparation specific to each area.
- General Comment: Interested in the role of the contractor versus the city in managing new vegetation during interim period before vegetation is fully established. Describe two-year post planting maintenance plan. Discussion focused on the issue that a maintenance plan may be inadequate before vegetation is established; there may be a need for more care of the vegetation during the transition period.
- Section 6.1.2.2, under Benthic Resources section, question assumptions regarding' greater/lesser value of benthic versus planktonic resources. Support for this?
- Section 6.1.2.2, Benthic Resources section, bio-accumulation is preferred term for bio-magnification.
- Section 6.1.2.2, Benthic Resources section, Recruitment from storm drain. What might be recruited from a storm drain that would be desirable. Give examples or delete.

-
- General Comment: All historic resources sections under Section 6. Historic resources are not just built features but also include landscape features that are remaining, for example vegetation and grading. Historic resources are also the whole character of the landscape, which includes grading, planting, and structures.
 - Section 6.1.3.1, include that the historic character has been compromised by the construction of the Bowker overpass, however, there are several historic features remaining, such as grading, significant trees and defined spatial relationships.
 - Section 6.1.3.1, some sections refer to Charlesgate as having no historic resources, although there are references about historical resources in other parts of the chapter. Need to clear up inconsistencies about historical resources in the Charlesgate area.
 - Section 6.1.3.1, need to clarify the kind of protection fencing that will be used.
 - Section 6.1.4, want reference to an explanation of construction traffic impacts, e.g. appendix reference and include clearer explanation of relative quantitative and qualitative impacts in this section.
 - General Comment: Section 6, all traffic sections, want layman's description of traffic and noise impact of construction.
 - Section 6.2, bullet 3, restore the bank as constructed according to historic intent, instead of natural bank.
 - Section 6.2.1.2, last sentence, need recommendation to address how to deal with Stony Brook conduit being a continuing source of contamination.
 - Section 6.2.1.2, define analytes in glossary.
 - Section 6.2.1.3, Staging Area Runoff, second sentence, substitute: crushed stone will minimize compaction, instead of leaving soil undisturbed, which is inaccurate.
 - Section 6.2.1.3, Turbid Water section, *Phragmites* should be cut before flowering in (the previous) July as a first step before seeds come out. Also include statement that proper cultural practices should be followed in removing *Phragmites*.
 - Section 6.2.2.1, p. 6-22, how is the loam ground going to be prepared for restoration? Similar to previous comment about aeration and tilling the soil.
 - Section 6.2.2.2, Examples of freshwater shellfish in the Fens, if any.
 - General Comment: Desirable to reference validation or documentation in appendices that support assertions throughout the draft EIR.

-
- Section 6.2.2 .1, How will mature historic trees and other historic features in the Fens bridge staging area be protected during construction.
 - Section 6.3.1.2, sediment quality section, concerned about limited reference to animal fecal matter. This is the first reference to this.
 - Section 6.4.1, second to last paragraph, need to include more strategies for discouraging geese, in addition to the strategy of planting vegetation. Planting will be done consistent with historic intent. Planting alone may not solve the geese problem.
 - Section 6.4, include in bulleted list: stabilization of eroding island shores.
 - Section 6.4.2.2 and 6.5.2.2, boiler plate language better suits down stream as opposed to upstream habitats. Character changes as you move upstream; regional accuracy required.
 - Concerned about sequence of dredging and silt fences in terms of the impact on the river and fish. Clarify whether one sequence of dredging is better than another sequence.
 - Section 6.4.2.2, Wildlife Resources, More detail on the rodent population.
 - Section 6.4.2.3, explain impact on Grebes under endangered and threatened species section. Why are Grebes not an issue? Not residents here?
 - Section 6.4.2.5, first paragraph, make reference to work that needs to be done on other two existing islands.
 - Section 6.4.3.3, want more explanation about design and impact of new softball field, particularly on historic resources, pedestrian and traffic impacts.
 - Section 6.5.1.3, fourth paragraph, 6-84, why only BWSC for the catch basin improvement program in Willow Pond?
 - Typo: repetition of word "dredging"

Section 7: Environmental Mitigation

- Section 7.0, p. 7-1, second sentence in second paragraph – need clarification on equal precedence.
- Section 7.2.6, who enforces work under Weekly Environmental Inspection Reports.
- Page 7-12, fourth bullet, number 3, re: water samples – three sources (field) are identified - where will the analysis of the other samples be done.

Section 9: Statutory and Regulatory Standards and Requirements

- Section 9.1.2, section 106, define what an undertaking is. It is a technical term (use info in earlier part of document).
- Section 9.1.2, this section should note that the Secretary of the Interior's standards are the benchmarks against which effects are evaluated.
- Section 9.1.2, the Mass Historic Commission is the SHPO not "would function as."
- P. 9-5, Delete last sentence in section 9.1.2 because it is not applicable.
- Section 9.2.1, in parentheses, correct spelling of man-made – not madmade!
- Section 9.2.1, second to last sentence in paragraph 2 regarding no historic elements at Charlesgate, contradicts earlier statements in Chapter 6 regarding historic features at Charlesgate.
- Table 9-1, and all similar tables in Section 9, reference the column titled "no effect on historic resources column" under Section 106. The river restoration work will impact the park, which is an historic resource. Therefore, under Section 106 none of the construction activities can be considered to have "no effect on historic resources," because it is obvious that construction will have an impact on the park. It is possible that the work may have "no adverse effect" but never "no effect." Recommend putting n/a in the "no effect on historic resources" column.

Prepared by Edward B. Cutler

#74462

Comments on **Best Management Practices (Section 2.5)**
Emerald Necklace Citizens Advisory Committee (CAC)

June 13, 2001

General Comments:

1. Secretary is looking for a pathway for protecting the resource of the Muddy River. CAC can help the Secretary convince the national government and other entities to fund this project. The Secretary is not interested in speed, but is interested in advice.
2. Comment made that we need to step back and look at broader issues.
3. Wherever eroded banks are referenced, include eroded paths.
4. The DEIR needs to state clearly and accurately which practices are currently implemented and which are possible alternatives.
5. Clarify that this section contains a laundry list and not recommendations. There should not be a differentiation between Best Management Practices and maintenance practices.
6. BMPs seem to be focused on water quality and need to address the other stated project objectives as well.

Detail Comments:

Section 2.5, p. 2-84, 2nd bullet needs to be more specific by adding "improve water quality in the Muddy River to a Class B level, thereby also contributing to the improvement of water quality in the Charles River."

Section 2.5, p. 2-84, add another bullet before the 5th bullet – "contribute to fishing and recreational uses in the Muddy River."

Section 2.5, p. 2-84, change "The selected alternatives are further described in Section 5.7 (not 5.6)". Check any other references in this section.

Section 2.5, p. 2-84. "A goal of the project is to reduce sediment loads by another 30%." The CAC was reluctant to set a higher goal, which would be desirable considering the effort and expense going into this project, and decided to request further information from the engineers to understand better the implications of asking for further reductions of sediment loads. Suggest making reference to the Emerald Necklace Master Plan and Olmsted's original design. The CAC recommends further explanation of the actual physical changes needed to achieve the 30% and support for arriving at this figure. For example, what would the cost of each change be, and how much would it reduce sediment loads.

Section 2.5.1, Table 2-2
General Comments –

change bullet symbol (printing as “T”) to sequential numbers.

want table to be more clear. In addition to city/town and proponent responsibilities, also include and identify practices that apply specifically to Muddy River area, either in another column or a separate table. See Street Sweeping below.

Request analysis of what BMP’s are being implemented/not implemented, either in a narrative or separate chart.

Detail Comments -

Illegal Sanitary Connections Remediation Program - request more current data than 1990 reference to illegal connections.

Residential Stormwater Monitoring Project – Recommendations should mention geese as well as dogs.

Section 3.0 – Stormwater and Sanitary Sewer Systems – there should be an explanatory footnote about ‘NPDES’.

Particle Separators (Private) - clarify that ft.² = square ft. Add a description of how private parking compliance is maintained.

Commercial Area Stormwater Monitoring Project - include summary of the findings from the final report.

Street Sweeping – list of street sweeping activities is city-wide. Add detail on what street sweeping is now performed specifically in the project area. Currently street sweeping in the Fenway is resident-driven, and should be required and added to the recommendations.

Management of Public Open Space Maintenance Practices – Clarify what actions will be taken about oil leaking from the former Brookline DPW site.

Section 2.5.2 General Comment - The issues of future maintenance, its funding, and management under multiple jurisdictions needs to be addressed.

Section 2.5.2 p. 2-92 ‘Typical urban runoff – litter, animal waste (5% to 25%)’. Change this from text to a bullet.

Section 2.5.2 figure 2-40, Add this pie chart to the **Executive Summary** to emphasize that 85% of urban runoff is related to maintenance. Create a separate chart that shows just maintenance.

Section 2.5.2.1 Catchbasin Cleaning – Add funding source.

Section 2.5.2.1 p. 2-95 Catchbasin Cleaning – CAC requests that the MDC define and break down their budget for all maintenance items. Now, maintenance budgets are kept only by Division (Charles River).

Section 2.5.2.1 p. 2-95 Clarify definition of Pacheco law as it relates to MDC privatization issues.

Section 2.5.2.4 p. 2-96 “Most of the illicit connections have already been identified.....” “Most” should be quantified.

Section 2.5.2.5, p. 2-97, suggest increasing frequency and number of hazardous waste collection sites and recommend institutional parking lots adjacent to the parks for possible collection sites.

Section 2.5.2.6, p. 2-97 (Lawn, Garden, and Park Maintenance) First and second bullets – why is MDC shown, and not proponents? Third bullet - question the accuracy of the statement about soil aeration being done in spring and fall. Add CAC recommendation that composting in Victory Gardens be moved up-land away from the river. Garbage should be removed in the fall.

Section 2.5.2.6, p. 2-97, Trail Maintenance - what efforts are being made to discourage dirt bike trails?

Section 2.5.2.7, p. 2-97 – typo in second last sentence, “very” should be “every”

Section 2.5.2.7, p 2-98 “City of Boston has comprehensive street sweeping program”. What streets in the watershed are included? This should be more specific.

Section 2.5.2.8, p. 2-99 last sentence, change “investigating alternative methods of pavement deicing” to “developing alternative methods of pavement deicing”.

Section 2.5.2.9, p. 2-99 Stormwater Bylaws - explain why there needs to be a designated feeding area for geese and ducks and provide more specifics on by-laws, and who will provide enforcement of pooper scooper laws.

Section 2.5.2.10, p. 2-99 Stormwater Guidelines.....-- Clarify and quantify the proposed tax incentives.

Section 2.5.2.11, p. 2-100 Restoration of Eroded Banks (fifth bullet), change “would provide a method”, to “will provide a method”.

Section 2.5.2.11, p. 2-100 Correcting MDC curb settings (sixth bullet), change “which should be incorporated”, to “which will be incorporated”.

Section 2.5.2.11, p. 2-100, Add bullet to keep oil runoff from streets out of the river in Boston and Brookline, including oil separators.

Section 2.5.3, p. 2-101 Treatment Control Options - need to include maintenance details of evaluating various BMPs.

Section 2.5.3, p 2-101, last paragraph - the scope of the Center for Watershed Protection Study should be broader. Village Brook study may be too specific.

Section 2.5.3, p 2-103 (Treatment Control Options – In-line Sewer Treatment Devices). Section specifics on whose doing water quality testing and with what money.

Section 2.5.4, p. 2-105 Summary of BMP Alternatives - Last sentence should be more specific. Add text "consistent with recommendations in Section 5".

Section 2.5.4.1, p. 2-106 Selected Source Control BMPs – 4th bullet "Maintain restored banks, pathways and uplands (BPRD and Brookline)". Add "with particular care and attention to active recreation areas adjacent to water (i.e. Daisy Field)".

Section 2.6, p. 2-109, Screening of the Project Alternatives and Selection of the Recommended Plans – "It includes full bank to bank dredging....list," add text "and restoration of historic structures, such as the Carlton Street Footbridge".

Prepared by Hugh Mattison

#74463

Comments on

Best Management Practices for Stormwater Runoff (Section 5.7)

Emerald Necklace Citizens Advisory Committee (CAC)

General Comments:

1. CAC is concerned about the ability of BPRD to commit to completing the BMPs based on assurances from other departments and the MDC. This is a weakness in the process and compromises the proponents' authority and potential success of the project.
2. The organization of the BMPs in the DEIR is scattered through different sections. There is no clear explanation of how they will work, when they will be implemented, what they will cost, and how they will be paid for. A chart detailing the problem, sources, jurisdiction, remediation, cost, funding sources, and dates for implementation would be useful.
3. Instead of stating that owners "should", the document should state it "is necessary" for owners to..... Language needs to be strengthened. References should be made to sections that describe how these recommendations will be enforced.
4. Section 8 (Management and Maintenance) reflects the CAC's desire for more specifics.
5. There should be a commitment in the document from the City of Boston and Town of Brookline. For example, they will do what, with what budget. The DEIR presents recommendations from consultants, not a commitment by proponents to follow these recommendations. If Brookline Town Meeting does not vote for budget, what is the remedy? How do the proponents plan to deal with this potential problem?
6. Information about the anticipated costs of BMP's for future years should be provided by the City of Boston and Town of Brookline. Both BMP capital improvements and BMP maintenance costs should be shown. See Section 8.11.3, page 8-40 for BMP cost chart (this chart is not adequate). Note – Bruce Conklin (CDM) commented that if the department has sufficient staff and resources, it was assumed that there will be no additional costs and therefore the costs were not broken down in DEIR. If departments did not have sufficient staff, equipment or maintenance, then the increased costs for these needed resources were identified in DEIR. CAC questioned this assumption. Was evidence provided by field observation, or merely by interview? There should be more information *from the consultants* as to whether sufficient resources exist.
7. Scope/boundaries of project - will be further discussed under Funding Strategy (Section 10). How will eroded upland slopes located beyond the

project boundary be addressed? Note – Laura Rome commented that the Project “extends well beyond the banks of the river to include the historical landscape as well.”

8. Public Education – The CAC would like to see descriptive boards and signage describing the project and types of equipment used in restoration.
9. Would like to see a visual included, showing project boundaries with shaded and unshaded areas.
10. Section 8, Management and Maintenance – How will park maintenance be insured and enforced in the future without citizen oversight? The CAC felt that its continued involvement or that of a similar body would be helpful.

Detail Comments:

Section 5.7.1, p. 5-57, Basin-wide Source Control BMPs:

General Comment: How can this be enforced?

1st bullet - water quality samples should be taken more frequently than annually and should be consistent with the frequency of sampling described in section 8. Samples should be taken consistently from the same sites to allow historical tracking. See Section 8 for relevant language.

2nd bullet - reword this section, strengthen language. Replace “should” with “is necessary” or “is recommended”.

3rd bullet - Who is going to coordinate information for the amount of de-icing products and how will these be implemented and enforced?

5th bullet p. 5-59 – how will trail maintenance to correct desire lines and prevent erosion be addressed beyond the boundaries of the project?

Section 5.7.2 p. 5-59 Basin-wide Treatment Control BMPs - Discussion about pilot program and particle separators and questions to Bruce Conklin (CDM). Money is available for four additional particle separators if needed. Each separator costs \$8-900,000.

Section 5.7.3 p. 5-59 Charlesgate – Identify what, if any, current BMP’s exist in the Charlesgate area.

Section 5.7.3, p. 5-59, last sentence – Add “repair”, along with street sweeping and catch basin cleaning.

Section 5.7.4.1, p. 5-60 Back Bay Fens, Source Control BMPs - first paragraph - "compost" should be changed to "yard waste/plant waste/garden waste", and it should be removed more frequently.

Section 5.7.4.1 - Victory Gardens is a private entity, which will need to enforce pesticide control. The Parks Department does have jurisdiction over the Garden Society. Fran Beatty noted they have discussion each year with the Victory Gardens. This is an important area for public education and should be coordinated with the Victory Gardens.

Section 5.7.4.2, Table 5-7 - Victory Gardens dredging volumes (12,445) seem high. Bruce Conklin (CDM) is going check the levels referenced in the table.

Section 5.7.7.2 p. 5-63 Willow Pond Treatment Control BMPs - is there any BMP related to the West Nile Virus in Willow Pond? Willow Pond was the center of the mosquito infestation in 2000.

Section 5.7.8 p.5-64 Enforcement and Monitoring of BMPs - The CAC is concerned about MDC ability to maintain parkways and their need for funding (Parking Lot to address the need for MDC funding). John Burckhardt reports that Samantha Overton is prepared to implement catch basin improvements. (Source of funding was not specified.)

Section 5.7.8, p 5-64 - need to reword last sentence in first paragraph, their dogs instead of themselves.

Section 5.7.8, first (litter control) and fourth (monitoring of BMPs) paragraphs - CAC would like to know what enforcement will be provided if BMP practices are not maintained.

Section 5.7.8, third paragraph - suggest that the last sentence does not belong here, not "fail to provide budget...". What steps are they taking to provide budget for operation and maintenance costs?

Section 5.7.8, first bullet - clarify what "annually" means. Does the "annual" program include quarterly sampling?

Prepared by Hugh Mattison

#74464

Comments on **Management and Maintenance Plan (Section 8)**
Emerald Necklace Citizens Advisory Committee (CAC)

June 4, 2001

Management & Maintenance

- Hugh Mattison made a presentation on park maintenance. Hugh also handed around photos and a manual on park maintenance. Hugh suggested that the CAC consider recommending Option 1 (from a slide) that the CAC continue role as ombudsperson, with escalation to Options 2 and 3 if results of maintenance do not satisfy CAC. A printed version of the presentation was distributed to the CAC May 15, 2001.

Slide from PowerPoint presentation by Hugh Mattison on park maintenance with the proposal (see below) that the CAC recommend option 1, with escalation to Options 2 or 3 if results of maintenance don't satisfy CAC.

Option	Level of Complexity	Time to Implement
1. CAC continues role as ombudsman	Low	Short
2. EOEA creates new Division	Medium	Medium
3. Legislature creates new Emerald Necklace authority	High	Long

- The CAC requested that the proponents find funds to enable the CAC to hire consultants to conduct an analysis of resources needed to maintain BMPs and other regular park maintenance activities, as outlined in Arlene Mattison's memo.
- Such a consultant is now being hired. Section 8 will need to be revised to incorporate the information provided in the consultant's report.
- **Section 8.1, p 8-3, CAC should be included in list of groups for the Maintenance and Management Plan.**
- **Section 8.1, p 8-3, number 5, identify the intended "park partners" and "private parties"?**
- **General Comment: Not enough staff, funding and training for staff for maintenance of the park.**

CAC Draft DEIR Comments

Management and Maintenance Plan

- Bruce – The CAC has a role as part of the MEPA advisory process.
- Fran Gershwin noted that CAC could request modification of the Secretarial Certificate from CAC annual updates to quarterly updates with access and meetings with proponents.
- **CAC suggested that they might want to have an independent advisory role for management and maintenance throughout the year, perhaps meeting quarterly, in addition to the MEPA annual review.** This concept was triggered by the statement in Section 5.7.8, p. 5-62, (Enforcement and Monitoring of BMPs), "in terms of source control BMPs, municipalities may allot large sums of money to design and construction costs, but fail to provide budget for operation and maintenance costs, which can range anywhere from 3% to 10% of the construction costs....the responsibility for enforcement and monitoring of BMPs rests on the project proponents." (See Arlene Mattison's memo of June 3, 2001)
- Betsy Shure Gross noted that it is up to the CAC to suggest how funding is tied to accountability.
- **The CAC requested clarification about the authority of the Secretary of EOE, specifically what recourse is available to the Secretary if the proponents do not fulfill their management and maintenance obligations? What are the repercussions? What or who is the accountable entity?** Eileen Woodford commented that there were two levels of discussion. One level is about how the area is managed: who, what, how, cost, accountability, structure, and noted that the current practices are deficient. The other level is that management and maintenance practices by committee will not work.
- If the proponent does not fulfill its obligations, does the Secretary have the power to withhold money and use it to hire out a private contractor? Can monies due to the municipalities from the state Lottery be withheld to complete tasks not finished by the proponents?
- **CAC may recommend a modification in MEPA process to ensure accountability.**
- **General Comment:** Section 8 is missing connections between overall maintenance needs and how those goals will be achieved, including a sense of priorities. The section needs to explain more clearly the intended result, especially in reference to the desired character of the landscape.
- **General Comment:** Section 8 is too generic and will not maintain the character of Olmsted's unique landscape.

- **In order to maintain the park as Olmsted intended, it is necessary that maintenance workers be given specialized training specific to this landscape, including a skills development piece.**
- Eileen suggested exploration of two options: 1) centralized administration of the park e.g. an authority that has responsibility and accountability to oversee park maintenance and management 2) establishment of a trust.
- Ed Burke suggested that the BMP section be put into one section.
- **CAC requested information about how other park models with multiple jurisdictions (eg Santa Monica, Blackstone, Harbor Islands) and other historic Olmsted parks (eg Central Park, Prospect Park) operate and are maintained. Specifically, how do they deal with park management and maintenance, jurisdiction, authority and enforcement issues? CAC would like to have this information to review within the next few weeks.**
- CAC agrees with Hugh's recommendation for the Annual Maintenance Chart, defined in terms of historic landscapes rather than only a generic park. Hugh's chart (see below) is not an exhaustive list and could include more maintenance tasks. Hugh's memo provides more details.

Task	Jurisdiction			Unit of Measure	Number of Units	Current Cost	Additional Cost	Total Cost
	Boston	Brookline	MDC					
Back Bay Fens				Acres				
Parkland				Acres				
Maintenance Level A								
Maintenance Level B								
Maintenance Level C								
Watering				Acres				
Graffiti removal				Hours				
Trash removal				Hours				
Planting beds				Square ft				
Active Recreation				Acres				
Woodland				Acres				
Tree pruning				Count				
Parkways				Linear ft				
Tree pruning				Count				

- The CAC requested that Table 8-4 and Table 8.5 be modified based on actual field observations and information filled in for Hugh's chart (Memo will be distributed separately).
- Section 8.4.3, p 8-25 (Management of Invasive Vegetation) Use of pesticides should be reviewed and approved as a public process. (Suzanne Comtois)

Summary of Consensus Comments:

The CAC reached consensus on the following comments:

1. *Section 8:* Section 8 is inadequate, in terms of accuracy as to current maintenance practices and in failing to indicate the management and maintenance practices needed to maintain the uniqueness of this park. There is a lack of connection between overall needs, methods to maintain the uniqueness of the Olmsted's park as opposed to a regular park, and priorities for management and maintenance practices. Strong concern was expressed about a lack of information as to staff, funding, resources and adequate training for staff.
2. *Future Role of CAC:* The CAC would like to explore the future role of the CAC with respect to overseeing park management and maintenance. In addition to the CAC playing an advisory role to the Secretary concerning the MEPA Annual Update, several options were discussed, such as meeting on a quarterly basis with the proponents.
3. *Accountability and Enforcement:* The CAC would like clarification about the Secretary's authority for enforcement of park management and maintenance on this project.
4. *Administration:* CAC wants to explore two methods for oversight of park management and maintenance: multi-jurisdictional and a centralized authority. The CAC has requested that the proponents provide information on management models for other multi-jurisdictional parks as well as a few examples of other Olmsted Parks.
5. *Information* – The CAC would like to see more specific information and figures for the management and maintenance and best management practices for the Emerald Necklace (as requested in the charts in Hugh's memo and Freddie's BMP memos).

Prepared by Hugh Mattison
6/13/01

#74465

Comments on **Funding (Section 10)**

Emerald Necklace Citizens Advisory Committee (CAC)

June 25, 2001

Some General Comments:

- This section should clearly reflect how much funding can realistically be secured from various funding sources, so the municipalities can realize the level of their required contributions.
- This whole section needs more work
- The section does not address capital funding issues as well as maintenance funding issues.

The CAC is very concerned that the proponents will create a segmented project by moving the fast-track portion of the project forward, without having received information on the funding for other sections. The proponents need to clarify all funding issues before moving forward with the first sections of the project.

DEIR needs to include the proponents' plan for how all necessary funding (both capital and maintenance) can be achieved.

Section should clearly identify which funding sources are actively being pursued by the proponents.

Capital and maintenance funding issues should be divided and covered in separate sub-sections. Maintenance needs funding source table like Table 10.2.

In identifying funds available from various sources, proponents should identify overhead or administrative costs included in grant money to be sure that the entire project cost is covered.

The proponents should list themselves as a funding source, particularly for the capital portion of the project. The City and Towns will lose credibility when they ask for money from the private sector, if they do not contribute financially.

The proponents need to strengthen the public/private partnership model:

- The final paragraph of Section 10.2, as written, and Section 10.10 limit partnerships to connections between institutions and the Boston Parks and Recreation Department. Both sections should include additional institutions and also include other organizations such as private developers, neighborhood and environmental groups.
- These sections should address the authority that the Town of Brookline may have to form public/private partnerships as well.
- Furthermore, partnerships with institutions and private entities should also be pursued for collection of funds for the capital project as well as the

creation of a maintenance endowment. The proponents should establish a list of institutions that may donate to the capital fund, and encourage formalized relationships with these institutions.

- Proponent should provide clear expectations for funding needs (capital vs. maintenance) from educational, cultural, medical and private development institutions.
- All public/private partnerships relating to maintenance should be memorialized with formal written agreements, rather than relying upon the good will of the private group.

Section 10.4.3, should be deleted or reworded to read "There is unlikely to be additional funding, unless another significant rain event occurs . . . "

On Section 10.8:

- The proponents need to develop and implement a legislative strategy to cover funding for the capital project and a management approach, similar to that proposed on the Federal, congressional level. This should be addressed in the document.
- The proponents should seek out all potential options for state legislation to cover any funding gaps in the capital costs of the project. The proponents need to be creative; if there is a revenue stream (such as a tax increment finance mechanism) to pay back the bonds, then it may easier to put together support for general obligation bonds.

Section 10.9, addresses funding for BMPs but does not address funding for general maintenance and monitoring. Funding for a comprehensive maintenance plan should be a part of this section.

Section 10.10, Emerald Necklace Conservancy is mentioned, but their role is not articulated. The proponents should clarify this.

In Table 10-2:

- The second listing of City of Boston should be Brookline.
- There needs to be a reality check to determine the proportion or percentage of funds that are available from each source.
- Arrange Table 10-2 into tiers that subdivide funding sources by level of contribution.
- Some CAC members question the accuracy of amounts that could be awarded.

#74466

Prepared by George Proakis, Marian Sabal, Fran Gershwin

Comments on **Parking Lot Issues**

Emerald Necklace Citizens Advisory Committee (CAC)

As of June 13, 2001

May 5, 2001 Meeting

- P. 2-97, 2.5.2.6 First part of section is inaccurate, should include responsibilities of all proponents and other responsible parties, in the form of list/chart. Within actions, "should" vs. "is" needs to be clarified. All proponents and responsible parties should be held to equal standard in regards to maintenance and management. Parking Lot: revisit in BMP's discussion.
- Parking Lot: Discuss MDC Issues at June 13 Meeting on Miscellaneous topic. Request a rep from MDC to provide information on accountability of MDC at June 13 Meeting.

May 7, 2001

- 5.1 on p. 5-2, "installation of new park benches and trash cans." "Virtual" Parking Lot.
- The proponent should work with CAC to come up with a process that involves MDC and other appropriate agencies or entities (move to parking lot).

May 16, 2001

- Parking Lot: Recommend process be put in place for site inspection and checking of vegetation prior to transfer from contractor to municipalities to ensure the vegetation is in good shape when the contract is done.
- Section 6.4.1, second to last paragraph, need to include more strategies for discouraging geese, in addition to the strategy of planting vegetation. Planting will be done consistent with historic intent. Planting alone may not solve the geese problem. Parking Lot:: May need protective fencing until vegetation is established.

May 21, 2001

- Section 2.5.2.1, last paragraph, inaccurate explanation of law. Need to revise. Recommendations need to be included in Parking Lot.
- General Comment, need to raise issues of future maintenance and funding under multiple jurisdictions, Parking Lot.

May 30, 2001

- Parking Lot: Public Education – CAC would like to see descriptive boards and signage describing the project and types of equipment used in restoration.
- Section 5.7.4.1 – Victory Gardens are a private entity who will need to enforce pesticide control. The Parks Department does have jurisdiction over the Garden Society. Fran noted they have discussion each year with the Victory Gardens. Public education should be coordination with the Victory Gardens (Parking Lot).
- CAC is concerned about MDC's ability to maintain parkways and their need for funding (Parking Lot to address the need for MDC funding).

June 13, 2001

- Parking Lot, CAC has concern re. accountability, especially during construction management.

#74457



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December 26, 2001

Emerald Necklace Citizens Advisory Committee

Subject: Draft Environmental Impact Report
EOEA #11865

Dear Committee Members:

On behalf of the City of Boston acting through Boston Parks and Recreation Department and the Town of Brookline, we have prepared this letter in response to your August 17, 2001 letter to the proponents on the Preliminary Draft Environmental Impact Report (DEIR).

Comments received in your letter of August 17, 2001 on the "pre-filing" DEIR (dated April 2001) were the result of several months of close work between the Committee, Project Proponents and the project consultants. The result of that work is that the "filing" DEIR is expected to address most of the issues raised by the CAC and will be a better reflection of a project with significant public input and support. In this letter we will explain overall how comments were addressed and the direction the proponents took on several issues.

- **Project Area and Scope** – Section 1 was reviewed and revised to more clearly indicate the project area and scope as defined by MEPA in the Certificate for ENF and in subsequent meetings during the CAC review period.
- **Historic Resource Protection** – Major sections of the Appendices show how the landscaping is anticipated to be rehabilitated in the historic context and the basis for that rehabilitation.
- **Maintenance** – An additional consultant has been hired and prepared an independent report on the park maintenance activities. As a result of this work Section 8 – Management and Maintenance section of the DEIR has been completely rewritten to reflect significant additional resource needs of the park areas. The proponents with the advice of the consultant have chosen to present the increase in terms of increased equivalent staff which may be implemented through increased efficiency of existing staff due to better training, additional volunteer usage, different management organizations and some increased staff. As these implementation strategies are more fully developed over time, these staff equivalents can eventually be expressed in annual costs.

In terms of management organization, several other park organizations in other parts of the country were investigated and none had direct parallels to the Muddy River park



Emerald Necklace Citizens Advisory Committee

December 26, 2001

Page 2

system in terms of multiple jurisdictions. The proponents, with the concurrence of the MEPA Unit, have chosen to present several management organization alternatives in the DEIR with the final selection to be provided in the Final EIR. This will allow time for the park management agencies to discuss and agree on a management organization for the future that all parties can support. It will also allow time for discussions with the Emerald Necklace Conservancy (ENC) to refine its role in support of park restoration and improved maintenance. The organization is not only contingent on a management structure but on a financial structure that can successfully develop funds needed to upgrade the maintenance of the park area. The final decision will have to consider both structure and financing.

- **Future CAC Role** - The proponents understand that the CAC is to have a continuing role in the future activities of the project, as described in the Secretary's Certificate Establishing a Special Review Procedure, April 29, 1999. Sections of the report have been edited to reinforce this concept.
- **Enforcement** - In terms of legal enforcement of project plans and management there does not appear to be any one regulatory group that can serve in this role. The proponents have described a plan that is an open public process with regular opportunities for community comment. We plan to use the MEPA process to report progress on the project plans to the public and regulatory agencies and then use the built-in CAC process for comment and review, including annual public meetings. The ENC is another forum where interested persons can work cooperatively with the proponents towards the mutual goal of improved maintenance. By opening this process to the public and private organizations the proponents expect to improve park maintenance and the public's experience in the parks through cooperative participation by public, regulatory and private organizations.
- **Funding** - Section 10 indicates the current strategy for both capital and maintenance funding. The capital funding strategy will be better defined after the Army Corps' funding level is made known in its draft Decision Document, due in January 2002. At present, we anticipate that the Corps will participate in funding most of the project elements. Regarding ongoing maintenance, the proponents believe the level of park maintenance and BMPs stated in the DEIR is appropriate and the respective Departments will seek such funding. As you know, municipal funding is dependent on the availability of funds and the appropriation process in each community. Other sources, such as Boston's Parkman Fund and private-public partnerships will also be explored.

In responding to the detailed comments by the CAC on various report sections the consultants for the proponents addressed the comments in several ways. In a majority of cases the comments were straightforward or editorial in nature and these comments were made in the text as indicated by the comment.



Emerald Necklace Citizens Advisory Committee

December 26, 2001

Page 3

In several locations comments raised issues that were better addressed in some other section of the DEIR. For example a comment on rehabilitation planting made on section 5.2.5 was more correctly addressed several sections later in 5.2.7. Another CAC comments on Section 6 asks for more details on the 2-year maintenance contract work – this is addressed in Section 8. Should the CAC have any questions as to where certain comments are addressed, feel free to contact John Burckardt, the proponents' project manager.

In Sections 8, 10 and the Executive Summary, major issues on the direction of the project were raised that required that the entire section to be rewritten. Therefore the individual comments on these sections probably no longer reflected the content of the section. In these cases the newly written sections should reflect the new direction and many of the minor comments are no longer applicable.

We should also point out that in a few instances the proponents disagreed with several comments from the CAC and either did not make changes or further explained their position.

In total, as Proponents we have made significant revisions to the DEIR being submitted to the CAC and ultimately to MEPA. These changes improve the overall content and understanding of the project, resulting in a stronger DEIR. We would like to express our appreciation to the CAC for their time and dedication to this project. We look forward to the CAC supporting the major positions and plans for this project so that we can move forward in improving the Muddy River area of the Emerald Necklace in a way that is historically sensitive, environmentally sound and enhances the public's enjoyment of this great resource.

Very truly yours,

A handwritten signature in cursive script that reads 'Bruce R. Conklin'.

Bruce R. Conklin, P.E.

Vice President

Camp Dresser & McKee Inc.

c: Robert Durand, Secretary of Environmental Affairs
Arthur Pugsley, MEPA
Commissioner Justine Liff, BPRD
Commissioner Thomas DeMaio, Brookline Dept. of Public Works
Stan Ivan, BPRD
Margaret Dyson, BPRD
Thomas Brady, Town of Brookline
John Burckardt

L

Appendix
L

APPENDIX L

**REGULATORY AND AGENCY
CORRESPONDENCE**

Regulatory and agency correspondence in Appendix L represents significant regulatory or agency material related to regulatory decisions and project direction.

Appendix L

Itemized List

Conservation Commissions

File no. issued for Notice of Intent, Boston	11/00
A Notice of Resource Area Determination Letter from Boston	2/01
File no. issued for Notice of Intent, Brookline	11/00
A Notice of Resource Area Determination Letter from Brookline	10/00

Army Corps of Engineers letter	6/99
Federal Emergency Management Agency – Finding of No Significant Risk- Charlesgate Hydraulic Improvements	10/99

NHESP Correspondence:

NHESP letter to Cortell (J. Gensel)	5/00
Cortell (J. Gensel) letter to NHESP (H. Dinkaloo)	11/00
H. Dinkaloo response to Cortell	1/01
Pat Huckery Letter	1/01

Memorandum of Understanding	11/4/99
------------------------------------	---------

Letters to/from Agencies for Pre Application Review Committee:

PRC Committee contact list	
Invitations to PRC	
Mtg. Materials from first PRC meeting,	4/25/00
• Agenda & Attendance	
• CAC meeting materials from 2/00 and 3/00, faxed to Richard McGuinness, Boston Conservation Commission	
Memo from John Burckhardt to Bruce Conklin, re: Erin Hutchins from National Marine Fisheries Service, unable to join PRC	
Letter from Richard Keller to Fran Beatty, MA Division of Fisheries & Wildlife, re: unable to join PRC	
Invitation to PRC, to attend Muddy River Site Visit	10/20/00
second PRC meeting,	
• Attendance sheet for Site Visit	
Third PRC meeting (material to be provided)	1/27/00
Fourth PRC meeting	3/14/01
• Presentation materials	

Executive Orders:

Environmental Justice	2/94
Invasive Species	2/99

Protection of Children from Environmental Health 4/97
Risks and Safety Risks

Munilaw: Statement from the Town of Brookline Conservation Commission
Munilaw: Policies and Procedures for the Boston Conservation Commission

Notice of Project Changes & Certificates:

Cutting, Removal and Planting adjacent to Agassiz Bridge	9/01
Back Bay Yard Drain	9/01



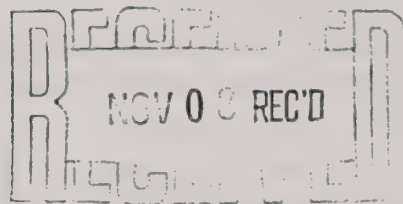
COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Metropolitan Boston – Northeast Regional Office

ARGEO PAUL CELLUCCI
Governor

JANE SWIFT
Lieutenant Governor

BOB DURAND
Secretary

LAUREN LISS
Commissioner



DEP File # 006-0867

RE: NOTIFICATION OF WETLANDS PROTECTION ACT FILE NUMBER BOSTON

DATE: 11/7/00 (city/town)

The Department of Environmental Protection has received a Notice of Intent filed in accordance with the Wetlands Protection Act (M.G.L. c. 131, §40):

Applicant: BOSTON PARKS & RECREATIONAL DEPT. Owner: _____

Address: 1010 MASSACHUSETTS AVENUE Address: _____

BOSTON, MA 02118

Project Location: MUDDY RIVER(WARD'S POND, WILLOW POND LEVERETT POND, RIVERWAY, BACKBAY FENS, CHARLESGATE)

IF CHECKED, THE FOLLOWING ITEM(S) APPLY TO THIS NOTICE OF INTENT:

A. ☐ This project has been assigned the following file # : _____

Although a file # is being issued, please note the following: _____

ISSUANCE OF A FILE NUMBER INDICATES ONLY COMPLETENESS OF SUBMITTAL, NOT APPROVAL OF APPLICATION

B. ☐ No file # will be assigned to this project until the following missing information is sent to this office, to meet the minimum submittal requirements in accordance with the Wetlands Protection Regulations at 310 CMR 10.00:

1. ☐ ___ copy(s) of a completed Notice of Intent (Form 3 or Form 4 of Sect. 10.99, whichever is applicable) and a copy of the Fee Transmittal Form, with a copy of the check for the State's share of the Notice of Intent filing fee.

2. ☐ ___ copy(s) of plans, calculations, and other documentation necessary to completely describe the proposed work and mitigation measures to protect resource areas.

3. ☐ ___ copy(s) of an 8.5" X 11" section of the USGS map of the area.

4. ☐ ___ copy(s) of plans showing compliance with Title 5 of the State Environmental Code, 310 CMR 15.00.

5. ☐ Proof that a copy of your Notice of Intent has been mailed or hand delivered to the Natural Heritage and Endangered Species Program.

COMMENTS:

(see page 2 for additional information)

C. ☐ Other Regulatory Jurisdiction

1. ☐ Application has been forwarded to Waterways Regulatory Program to determine if a Chapter 91 License is required.

2. ☐ Applicant is advised to forward a copy of the Notice of Intent to the Corps of Engineers for review (call 1-800-362-4367 for information).

D. ☐ 401 Water Quality Certification

The project described in your Notice of Intent requires a 401 Water Quality Certification from the Department of Environmental Protection and may require submittal of a 401 application form. See below for further details:

1. ☐ **Based upon the information submitted in and with your Notice of Intent a separate 401 Water Quality Certification application form is not required.** The Department has reviewed the plans submitted by the applicant and finds that there is reasonable assurance that the project or activity will be conducted in a manner that will not violate the Massachusetts Surface Water Quality Standards, provided that:
- a) the applicant receives and complies with a Final Order of Conditions from the local conservation commission or the Department;
 - b) The Order of Conditions does not cause the loss of more than 5,000sq.ft. of bordering vegetated wetlands and land under water and/or the dredging of more than 100 cubic yards of land under water;
 - c) any loss of vegetated wetlands has been mitigated with a minimum replication of 1:1; and is not part of a subdivision; does not cause the loss of any Wetlands designated as
 - d) The project is not exempt from the M.G.L. c. 131, §40-the Wetlands Protection Act; Outstanding Resource Waters; and does not cause the loss of any salt marsh.

Therefore, provided that the above conditions are satisfied, the Final Order of Conditions will serve as the Water Quality Certification for this project. This does not relieve the applicant of the duty to comply with any other statutes or regulations.

2. ☐ Before the activity described in the Notice of Intent can commence, you must obtain a Water Quality Certification form from this Regional Office. **Please complete the enclosed 401 Water Quality Certification application form and file it with this Regional Office for review.**

3. ☐ Your project involves dredging of greater than 100 cubic yards of material or requires a permit from the Federal Energy Regulatory Commission for work in "waters of the Commonwealth." Therefore, your proposed project is subject to 314 CMR 9.00 and requires a Water Quality Certification. **Please complete the enclosed 401 Water Quality Certification application form and file it with the Department of Environmental Protection, Waterways Program, and One Winter Street, Boston, MA 02108.** Contact the Division of Waterways program at 617-292-5655 if you have any questions.

For more information please contact: MR. BOGUE, at 978- 661-7600.

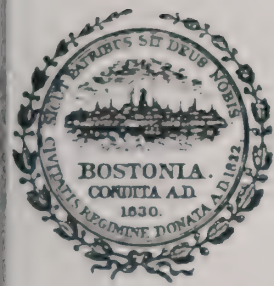
Cc: Conservation Commission

☐ U.S. Army Corps of Engineers

☐ Coastal Zone Management

☐ DEP- Water Pollution Control

☐ Representative:MR NOYES, CORTELL & ASSOC., 244 SECOND AVE.,
WALTHAM,MA 02451



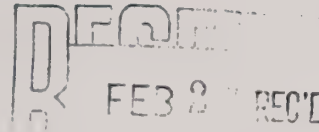
CITY OF BOSTON

THE ENVIRONMENT DEPARTMENT

Boston City Hall, Room 805 • Boston, MA 02201 • 617/635-3850 • FAX: 617/635-3435

February 21, 2001

Mr. Carton L. Noyes
Jason M. Cortell and Associates Inc.
244 Second Avenue
Waltham, MA 02451
BY CERTIFIED MAIL # 7099 3400 0003 0627 1005



RE: **DEP File No. 6-867: Order of Resource Area Delineation,
Boston Parks and Recreation Department, Muddy River Restoration Project**

Dear Mr. Noyes:

Enclosed please find the Order of Resource Area Delineation pursuant to Massachusetts Wetlands Protection Act, G.L. c. 131, §. 40 issued by the Boston Conservation Commission on February 21, 2001. The determination of the Order of Delineation is Accurate. The boundaries described on the referenced plans (No. 1-34) and in the Abbreviated Notice of Resource Area Delineation are accurately drawn for Bordering Vegetated Wetlands.

This Order shall be valid for three years from the date of issuance.

If you have any questions regarding this Order, please call me at 635-4417.

Very truly yours,

Timothy J. Famulare
Executive Secretary
Boston Conservation Commission

Enclosure

Cc: James Sprague, DEP
Fran Beatty, Boston Parks and Recreation Department

WPA Form 4B – Order of Resource Area Delineation

6-0867

Provided by DEP

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

A. General Information

Important:
When filling out
forms on the
computer, use
only the tab
key to move
your cursor -
do not use the
return key.



From:

Boston
Conservation Commission

This Issuance is for (check one):

- ☒ Order of Resource Area Delineation
☐ Amended Order of Resource Area Delineation

To: Applicant:

Boston Parks and Recreation Department
Name
1010 Massachusetts Avenue
Mailing Address
Boston MA 02118
City/Town State Zip Code

Property Owner (if different from applicant):

same
Name
Mailing Address
City/Town State Zip Code

1. Project Location:

Muddy River (Ward's Pond, Willow Pond, Leverett
Pond, Riverway, Back Bay Fens, Charlesgate) Boston/Brookline
City/Town

Assessors Map/Plat Number

Parcel /Lot Number

2. Title and Date of Final Plans and Other Documents:

Muddy River Restoration Project- Wetlands Delineation: September 2000
Title Final Date (or Revised Date, if applicable)
Key Plan; Plans No. 1-34

3. Dates:

September 6, 2000
Date Notice of Intent Filed

September 20, 2000
Date Public Hearing Closed

February 21, 2001
Date of Issuance

WPA Form 4B – Order of Resource Area Delineation

6-0867

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by DEP

B. Order of Delineation

The Conservation Commission has determined the following (check whichever is applicable):

☒ **Accurate:** The boundaries described on the referenced plan(s) above and in the Abbreviated Notice of Resource Area Delineation are accurately drawn for the following resource area(s):

☒ Bordering Vegetated Wetlands

☐ Other Resource Area(s), specifically:

☐ **Modified:** The boundaries described on the plan(s) referenced above, as modified by the Conservation Commission from the plans contained in the Abbreviated Notice of Resource Area Delineation, are accurately drawn from the following resource area(s):

☐ Bordering Vegetated Wetlands

☐ Other Resource Area(s), specifically:

☐ **Inaccurate:** The boundaries described on the referenced plan(s) and in the Abbreviated Notice of Resource Area Delineation were found to be inaccurate and cannot be confirmed for the following resource area(s):

☐ Bordering Vegetated Wetlands

☐ Other Resource Area(s), specifically:

The boundaries were determined to be inaccurate because:



WPA Form 4B – Order of Resource Area Delineation

6-0867
Provided by DEP

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

B. Order of Delineation (cont.)

This Order of Resource Area Delineation determines the boundaries of those resource areas noted above and is binding as to all decisions rendered pursuant to the Massachusetts Wetlands Protection Act (M.G.L. c.131, § 40) and its regulations (310 CMR 10.00) regarding such boundaries. This Order does not, however, determine the boundaries of any resource area or Buffer Zone to any resource area not specifically noted above, regardless of whether such boundaries are contained on the plans attached to this Order or to the Abbreviated Notice of Resource Area Delineation.

This Order must be signed by a majority of the Conservation Commission. The Order must be sent by certified mail (return receipt requested) or hand delivered to the applicant. A copy also must be mailed or hand delivered at the same time to the appropriate DEP Regional Office (see Appendix A)

Signatures:

This Order is valid for three years from the date of issuance.

This Order is issued to the applicant and the property owner (if different) as follows:

☐ by hand delivery on

☐ by certified mail, return receipt requested on

Date

Date

C. Appeals

The applicant, the owner, any person aggrieved by this Order, any owner of land abutting the land subject to this Order, or any ten residents of the city or town in which such land is located, are hereby notified of their right to request the appropriate DEP Regional Office (see Appendix A) to issue a Superseding Order of Resource Area Delineation. The request must be made by certified mail or hand delivery to the Department, with the appropriate filing fee and a completed Appendix E: Request for Departmental Action Fee Transmittal Form, as provided in 310 CMR 10.03(7) within ten business days from the date of issuance of this Order. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant, if he/she is not the appellant.

The request shall state clearly and concisely the objections to the Order which is being appealed and how the Order does not contribute to the protection of the interests identified in the Massachusetts Wetlands Protection Act, (M.G.L. c. 131, § 40) and is inconsistent with the wetlands regulations (310 CMR 10.00). To the extent that the Order is based on a municipal bylaw or ordinance, and not on the Massachusetts Wetlands Protection Act or regulations, the Department of Environmental Protection has no appellate jurisdiction.

WPA Appendix E – Request for Departmental Action Fee Transmittal Form
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

A. Request Information

1. Person or party making request (if appropriate, name the citizen group's representative):

Name

Mailing Address

City/Town

State

Zip Code

Phone Number

Fax Number (if applicable)

Project Location

Mailing Address

City/Town

State

Zip Code

2. Applicant (as shown on Notice of Intent (Form 3), Abbreviated Notice of Resource Area Delineation (Form 4A); or Request for Determination of Applicability (Form 1)):

Name

Mailing Address

City/Town

State

Zip Code

Phone Number

Fax Number (if applicable)

3. DEP File Number:

B. Instructions

1. When the Departmental action request is for (check one):

- ☐ Superseding Order of Conditions
☐ Superseding Determination of Applicability
☐ Superseding Order of Resource Area Delineation

Send this form and check or money order for \$50.00, payable to the *Commonwealth of Massachusetts* to:

Department of Environmental Protection
Box 4062
Boston, MA 02211

WPA Appendix E – Request for Departmental Action Fee Transmittal Form

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

B. Instructions (cont.)

2. On a separate sheet attached to this form, state clearly and concisely the objections to the Determination or Order which is being appealed. To the extent that the Determination or Order is based on a municipal bylaw, and not on the Massachusetts Wetlands Protection Act or regulations, the Department has no appellate jurisdiction.
3. Send a **copy** of this form and a **copy** of the check or money order with the Request for a Superseding Determination or Order by certified mail or hand delivery to the appropriate DEP Regional Office (see Appendix A).
4. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant, if he/she is not the appellant.



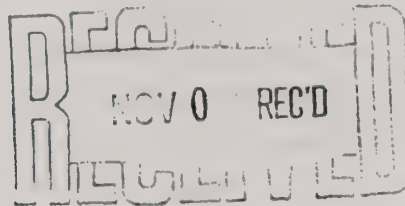
COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Metropolitan Boston – Northeast Regional Office

ARGEO PAUL CELLUCCI
Governor

JANE SWIFT
Lieutenant Governor

BOB DURAND
Secretary

LAUREN LISS
Commissioner



DEP File # 120-090

RE: NOTIFICATION OF WETLANDS PROTECTION ACT FILE NUMBER BROOKLINE

DATE: 11/7/00 (city/town)

The Department of Environmental Protection has received a Notice of Intent filed in accordance with the Wetlands Protection Act (M.G.L. c. 131, §40):

Applicant: BOSTON PARKS & RECREATIONAL DEPT. Owner: _____

Address: 1010 MASSACHUSETTS AVENUE

Address: _____

BOSTON, MA 02118

Project Location: MUDDY RIVER (WARD'S POND, WILLOW POND, LEVERETT POND, RIVERWAY, BACKBAY FERNS, CHARLESGATE

IF CHECKED, THE FOLLOWING ITEM(S) APPLY TO THIS NOTICE OF INTENT:

A. ☐ This project has been assigned the following file #: _____

Although a file # is being issued, please note the following: _____

ISSUANCE OF A FILE NUMBER INDICATES ONLY COMPLETENESS OF SUBMITTAL, NOT APPROVAL OF APPLICATION

B. ☐ No file # will be assigned to this project until the following missing information is sent to this office, to meet the minimum submittal requirements in accordance with the Wetlands Protection Regulations at 310 CMR 10.00:

1. ☐ ___ copy(s) of a completed Notice of Intent (Form 3 or Form 4 of Sect. 10.99, whichever is applicable) and a copy of the Fee Transmittal Form, with a copy of the check for the State's share of the Notice of Intent filing fee.

2. ☐ ___ copy(s) of plans, calculations, and other documentation necessary to completely describe the proposed work and mitigation measures to protect resource areas.

3. ☐ ___ copy(s) of an 8.5" X 11" section of the USGS map of the area.

4. ☐ ___ copy(s) of plans showing compliance with Title 5 of the State Environmental Code, 310 CMR 15.00.

5. ☐ Proof that a copy of your Notice of Intent has been mailed or hand delivered to the Natural Heritage and Endangered Species Program.

COMMENTS:

(see page 2 for additional information)

C. ☐ Other Regulatory Jurisdiction

1. ☐ Application has been forwarded to Waterways Regulatory Program to determine if a Chapter 91 License is required.

2. ☐ Applicant is advised to forward a copy of the Notice of Intent to the Corps of Engineers for review (call 1-800-362-4367 for information).

D. ☐ 401 Water Quality Certification

The project described in your Notice of Intent requires a 401 Water Quality Certification from the Department of Environmental Protection and may require submittal of a 401 application form. See below for further details:

1. ☐ **Based upon the information submitted in and with your Notice of Intent a separate 401 Water Quality Certification application form is not required.** The Department has reviewed the plans submitted by the applicant and finds that there is reasonable assurance that the project or activity will be conducted in a manner that will not violate the Massachusetts Surface Water Quality Standards, provided that:

- a) the applicant receives and complies with a Final Order of Conditions from the local conservation commission or the Department;
- b) The Order of Conditions does not cause the loss of more than 5,000sq.ft. of bordering vegetated wetlands and land under water and/or the dredging of more than 100 cubic yards of land under water;
- c) any loss of vegetated wetlands has been mitigated with a minimum replication of 1:1; and is not part of a subdivision; does not cause the loss of any Wetlands designated as
- d) The project is not exempt from the M.G.L. c. 131, §40-the Wetlands Protection Act; Outstanding Resource Waters; and does not cause the loss of any salt marsh.

Therefore, provided that the above conditions are satisfied, the Final Order of Conditions will serve as the Water Quality Certification for this project. This does not relieve the applicant of the duty to comply with any other statutes or regulations.

2. ☐ Before the activity described in the Notice of Intent can commence, you must obtain a Water Quality Certification form from this Regional Office. **Please complete the enclosed 401 Water Quality Certification application form and file it with this Regional Office for review.**

3. ☐ Your project involves dredging of greater than 100 cubic yards of material or requires a permit from the Federal Energy Regulatory Commission for work in "waters of the Commonwealth." Therefore, your proposed project is subject to 314 CMR 9.00 and requires a Water Quality Certification. **Please complete the enclosed 401 Water Quality Certification application form and file it with the Department of Environmental Protection, Waterways Program, and One Winter Street, Boston, MA 02108.** Contact the Division of Waterways program at 617-292-5655 if you have any questions.

For more information please contact: MR. BOGUE at 978- 661-7600.

Cc: Conservation Commission

☐ U.S. Army Corps of Engineers

☐ Coastal Zone Management

☐ DEP- Water Pollution Control

☐ Representative:MR. NOYES, CORTELL & ASSOC., 244 SECOND AVE.,
WALTHAM,MA 02451



Town of Brookline

Conservation Commission

Stephen Burrington, Esq., Chair
Joanna Wexler, Vice-Chair
Werner Lohe, Esq., Clerk
Kate Bowditch
Adam Kahn
Roberta Schnoor
Elissa Tonkin

Associates
Keith Beasley, P.E.
Joan Fried, M.D.
Barbara Mackey
Marian Lazar

October 2, 2000

Ms. Fran Beatty
Boston Parks and Recreation Department
1010 Massachusetts Avenue
Boston, Massachusetts 02118

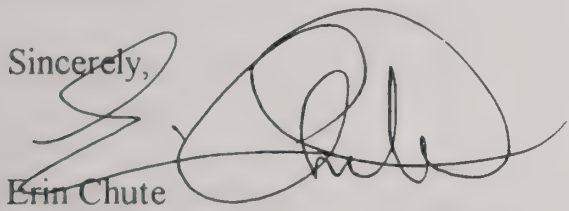
Re: Muddy River: Order of Resource Area Delineation

Dear Ms. Beatty

On September 26, 2000 the Brookline Conservation Commission held a public hearing to discuss the Request for Resource Area Delineation filed by the Boston Parks Department regarding the delineation of bordering vegetated wetlands, land under water, river, bank and bordering land subject to flooding in the Muddy River (Ward's Pond, Willow Pond, Leverett Pond, Riverway). The Conservation Commission reviewed the submittal and voted to approve the Order of Resource Area Delineation.

Attached please find a signed copy of the Order of Resource Area Delineation for your file. I would be happy to help you with any questions that you might have, please feel free to call me at anytime.

Sincerely,


Erin Chute

Conservation Administrator

cc: John Burckardt, Boston Parks Department
Dwight Dunk, Camp, Dresser and McKee, Inc.
✓ Carl Noyes, Cortell Associates
Department of Environmental Protection, Wetlands and Waterways Division



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

DEP File Number

120-91

Provided by DEP

WPA Form 4B – Order of Resource Area Delineation

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

A. General Information

Important:
When filling out
forms on the
computer, use
only the tab
key to move
your cursor -
do not use the
return key.



From:

Brookline Conservation Commission
Conservation Commission

This Issuance is for (check one):

- ☒ Order of Resource Area Delineation
☐ Amended Order of Resource Area Delineation

To: Applicant:

Boston Parks and Recreation Department

Name

1010 Massachusetts Avenue

Mailing Address

Boston

MA

02118

City/Town

State

Zip Code

Property Owner (if different from applicant):

Name

Mailing Address

City/Town

State

Zip Code

1. Project Location:

Muddy River (Ward's Pond, Willow Pond, Leverett
Pond, Riverway)

Brookline

City/Town

Assessors Map/Plat Number

Parcel /Lot Number

2. Title and Date of Final Plans and Other Documents:

Muddy River Restoration Project Wetlands Delineation

Title

September 2000

Final Date (or Revised Date, if applicable)

3. Dates:

August 31, 2000

Date Notice of Intent Filed

September 26, 2000

Date Public Hearing Closed

September 26, 2000

Date of Issuance



WPA Form 4B – Order of Resource Area Delineation

Provided by DEP

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

B. Order of Delineation

The Conservation Commission has determined the following (check whichever is applicable):

- ☒ **Accurate:** The boundaries described on the referenced plan(s) above and in the Abbreviated Notice of Resource Area Delineation are accurately drawn for the following resource area(s):

☒ Bordering Vegetated Wetlands

☒ Other Resource Area(s), specifically:

Bank, River, Bordering land subject to Flooding,
Land Under Water

- ☐ **Modified:** The boundaries described on the plan(s) referenced above, as modified by the Conservation Commission from the plans contained in the Abbreviated Notice of Resource Area Delineation, are accurately drawn from the following resource area(s):

☐ Bordering Vegetated Wetlands

☐ Other Resource Area(s), specifically:

- ☐ **Inaccurate:** The boundaries described on the referenced plan(s) and in the Abbreviated Notice of Resource Area Delineation were found to be inaccurate and cannot be confirmed for the following resource area(s):

☐ Bordering Vegetated Wetlands

☐ Other Resource Area(s), specifically:

The boundaries were determined to be inaccurate because:



WPA Form 4B – Order of Resource Area Delineation

Provided by DEP

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

B. Order of Delineation (cont.)

This Order of Resource Area Delineation determines the boundaries of those resource areas noted above and is binding as to all decisions rendered pursuant to the Massachusetts Wetlands Protection Act (M.G.L. c.131, § 40) and its regulations (310 CMR 10.00) regarding such boundaries. This Order does not, however, determine the boundaries of any resource area or Buffer Zone to any resource area not specifically noted above, regardless of whether such boundaries are contained on the plans attached to this Order or to the Abbreviated Notice of Resource Area Delineation.

This Order must be signed by a majority of the Conservation Commission. The Order must be sent by certified mail (return receipt requested) or hand delivered to the applicant. A copy also must be mailed or hand delivered at the same time to the appropriate DEP Regional Office (see Appendix A)

Signatures:

[Handwritten signatures of three members of the Conservation Commission]

[Handwritten signature of the applicant]

This Order is valid for three years from the date of issuance.

This Order is issued to the applicant and the property owner (if different) as follows:

☐ by hand delivery on

Date

☒ by certified mail, return receipt requested on

October 2, 2000

Date

C. Appeals

The applicant, the owner, any person aggrieved by this Order, any owner of land abutting the land subject to this Order, or any ten residents of the city or town in which such land is located, are hereby notified of their right to request the appropriate DEP Regional Office (see Appendix A) to issue a Superseding Order of Resource Area Delineation. The request must be made by certified mail or hand delivery to the Department, with the appropriate filing fee and a completed Appendix E: Request for Departmental Action Fee Transmittal Form, as provided in 310 CMR 10.03(7) within ten business days from the date of issuance of this Order. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant, if he/she is not the appellant.

The request shall state clearly and concisely the objections to the Order which is being appealed and how the Order does not contribute to the protection of the interests identified in the Massachusetts Wetlands Protection Act, (M.G.L. c. 131, § 40) and is inconsistent with the wetlands regulations (310 CMR 10.00). To the extent that the Order is based on a municipal bylaw or ordinance, and not on the Massachusetts Wetlands Protection Act or regulations, the Department of Environmental Protection has no appellate jurisdiction.



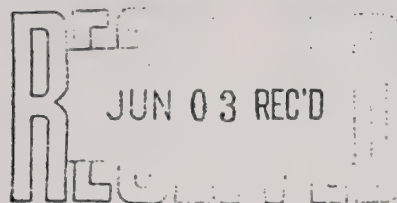
DEPARTMENT OF THE ARMY
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS
696 VIRGINIA ROAD
CONCORD, MASSACHUSETTS 01742-2751

REPLY TO
ATTENTION OF

June 1, 1999

Regulatory Branch
CENAE-CO-R-199900436

Mr. Carlton L. Noyes
Project Manager
Cortell Associates
244 Second Avenue
Waltham, Massachusetts 02451-1177



Dear Mr. Noyes:

Thank you for providing the May 12, 1999 tour of the Emerald Necklace parklands and Muddy River system. As discussed we are submitting comments to facilitate our permitting process.

The project will fill over 1 acre of wetlands and will therefore require a Corps of Engineers Individual Permit. Wetland fill will result from dredging and subsequent grading the wetlands along the riverbanks, and Phragmites/wetland restoration. The Individual Permit process involves a 30-day public review period. We recommend that you submit your Corps application prior to submittal of the Draft Environmental Impact Report (EIR) to allow simultaneous public comment on both processes. A 401 Water Quality Certification is required before we can issue a Corps permit.

Table 1, Page 4-2 of The Emerald Necklace Environmental Improvements Master Plan, identifies existing and proposed wetlands functions and values. This table appears accurate in light of the information currently available at the early stages of this review process. The enclosed document entitled "The Highway Methodology Workbook *Supplement* – Wetland Functions and Values, *A Descriptive Approach*" provides guidance on how to identify and display wetland functions and values. Please use the format shown when submitting the functions and values evaluation.

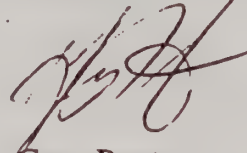
Based upon our site inspection and review of the Environmental Notification Form (ENF), the Federal resource agencies (EPA and U.S. Fish and Wildlife Service) and we agree that no additional information regarding alternatives is required.

In an effort to balance the public interest with the project's goals and to ensure area stability, during the review process the following specifics require review: implementation of best management practices and construction techniques, particularly handling and disposal of excavated material; side slope design; and revegetation.

In accordance with our responsibilities under Section 106 of the National Historic Preservation Act, the State Historic Preservation Officer (Massachusetts Historical Commission) and we will need to consult with the Advisory Council on Historic Preservation. We encourage early coordination with us as you coordinate with the Massachusetts Historical Commission throughout the EIR process.

If you have any questions please contact me at (978) 318-8862.

Sincerely,

A handwritten signature in dark ink, appearing to read 'GP', is written over a faint, circular embossed seal. The seal contains text that is mostly illegible but appears to include 'FEDERAL RESERVE BANK' and 'NEW YORK'.

Greg Penta
Senior Project Manager
Regulatory Branch

Enclosure

DRAFT
FINDING OF NO SIGNIFICANT IMPACT

HAZARD MITIGATION GRANT PROGRAM (HMGP)
CHARLESGATE HYDRAULIC IMPROVEMENT PROJECT
BOSTON, MASSACHUSETTS

FEMA-1142-DR-MA

Based on the attached Environmental Assessment (EA) of the proposed project, and in accordance with the Council on Environmental Quality (CEQ) regulations implementing the National Environmental Policy Act (NEPA), and the Federal Emergency Management Agency (FEMA) regulations implementing NEPA listed in 44 CFR, Part 10, and in compliance with Executive Orders 11988, 11990, 12898, and 13045, a Finding of No Significant Impact (FONSI) for this project is made, and therefore, an Environmental Impact Statement will not be prepared. Information on this project can be obtained by contacting Fred Vanderschmidt, Project Monitor, FEMA Region I, Boston, Massachusetts at (617) 223-4184.

The Muddy River watershed has a drainage area of approximately 5.6 square miles and is located primarily within the communities of Boston and Brookline, Massachusetts. The Muddy River originates at Jamaica pond and flows through a series of culverts and small streams ultimately discharging into the Charles River. The Muddy River is located within a linear park system called the Emerald Necklace, designed in the late 19th century by Fredrick Law Olmsted. The Emerald Necklace is the oldest park system in the United States, is a designated Boston Landmark, and is on the National Register of Historic Places.

The purpose and need for action is to reduce the potential for flooding and the flood impacts to the built environment along the Muddy River. The proposed project, known as the Charlesgate Hydraulic Improvement Project, is designed to remove 5,000 cubic yards of accumulated debris and sediment from a .29 mile portion of the Muddy River between Ipswich Street and its outfall at the Charles River. This portion of the Muddy River constricts much of the floodwater flow in the watershed due to the sediment accumulation and debris, which collects under the seven bridges in the vicinity. Consequently, these restrictions have contributed to the flooding of the Muddy River, which has occurred frequently in the past, with especially significant recent flooding occurring in the fall of 1996 and the spring of 1998. During these high flood stages, extensive flood damage to adjacent homes, businesses, and public infrastructure occurred along the Muddy River in the City of Boston and Town of Brookline. This flooding was part of the disaster event of significant magnitude to warrant a presidential disaster declaration, FEMA-1142-DR-MA.

This project is part of Phase I of the Emerald Necklace Environmental Master Plan and is being evaluated as an individual undertaking separate from the entire Master Plan.

APPROVAL CONDITIONS:

The applicant will ensure the following conditions are met:

1. SOILS:

- To mitigate against the potential short-term adverse impacts to soils, Best Management Practices (BMPs) such as silt fences and other similar measures to address soil disturbance of the banks and parklands adjacent to the Muddy River should be implemented where possible.
- Vehicles used to transport work crews, equipment, and dredge spoils will utilize existing paved roads and parklands to access the streambank and staging areas. Soil stability would be restored upon completion of dredging operations by grading and re-vegetating as necessary.

2. CULTURAL RESOURCES:

- The applicant will consult with Massachusetts' Historic Commission (MHC) to identify staging areas with minimal adverse impacts to important vegetation and the historic landscape elements. Once the staging areas are identified the applicant will insure measures will be taken to mitigate the potential impacts of storage areas of construction equipment, as well as dredged materials, on sensitive historic resources.

3. SEDIMENT DISPOSAL/HAZARDOUS MATERIALS:

- The sediment should be sampled after it is dewatered and before it is disposed. The samples should be analyzed for disposal parameters according to the requirements of the recycling or disposal facility selected to receive the sediment.
- The water generated during the dewatering should be collected and sampled prior to treating or discharging the water either to the sanitary sewer or back into the Muddy River. The DEP will be notified of the intent to discharge to the Muddy River and guidelines on sampling should be obtained from the DEP.
- All sediments that are sulfide-reactive will require compliance with the DEP's "Interim Management Procedures for Upland Reuse/Disposal of Contaminated Sediments, Reactive Sediments" (1997).
- TCLP-lead sediment soils are to be treated to remove the contamination prior to reuse/disposal at an in-state or out-of-state lined landfill. Section 8.2 of DEP's Reuse and Disposal of Contaminated Soils at Massachusetts Landfills, Policy #COMM-97-001, describes the requirements for such treatment.

- All analytical results of the sediment will be provided to the recycling and disposal facilities in order that a judgement can be made on the appropriate disposition of the sediment according to all local, state, and federal rules and regulations.

4. WETLANDS:

- The Proposed Action will require a filing of Notice of Intent with the Boston Conservation Commission regarding wetlands impacts.
- The Applicant will be required to coordinate with the U.S. Army Corps of Engineers to identify permitting requirements of Section 404 of the Clean Water Act.

5. WATER QUALITY:

- The Proposed Action is subject to the surface water quality criteria specified by 310 CMR 4.
- Close coordination with the division of Wetlands and Waterways will be required during the permitting and implementation phase of the Proposed Action for development and implementation of all surface water quality mitigation, monitoring, and reporting procedures.
- Dredging impacts on water quality should be mitigated by choosing the least environmentally damaging dredging equipment.
- To evaluate short-term impacts to water quality, a water quality monitoring program will be established prior to dredging operations. In addition, it is recommended that limited or no dredging activities occur during peak recreational periods in the Charles River Basin to avoid exposure to suspended absorbed and dissolved hazardous chemicals
- Silt curtains will be employed in series to provide redundant systems to protect downstream turbidity levels. Appropriate technology will be put in place at the outlet to the Charles River to minimize sediment loads and associated pollutant loads due to agitation of the contaminated sediments and associated pollutant release

6. NATURAL HABITAT

- It is recommended that in-water activities not occur between February 1 and June 15 of any year to avoid the migratory season of the anadromous and catadromous

fish resources in the Charles River.

7. VEGETATION/LANDSCAPING

- In order to minimize impact to trees in the parkland areas adjacent to the river, equipment staging areas and dredging operations should avoid mature trees where possible.
- In cases where heavy equipment must impact parkland, restoration should be meaningful, including aeration of the impacted land areas and replanting of native plants where revegetating.

8. TRAFFIC:

- To mitigate traffic impacts to the area strategies such as subsidized MBTA passes, secured on-site storage for worker's equipment, and remote parking with shuttles for construction workers are options that should be implemented.

9. NOISE:

- The City's requirements for construction noise will be followed by adopting regulatory noise reduction measures.

10. AIR QUALITY:

- Dust originating at construction sites will be prevented from being transmitted to adjacent sites and roadways and into storm drains using various dust prevention methods.

Activities related to the Proposed Project will not have a substantial impact on natural resources with indicated conditions or mitigation measures implemented.

Recommended:

Regional Environmental Officer

Date

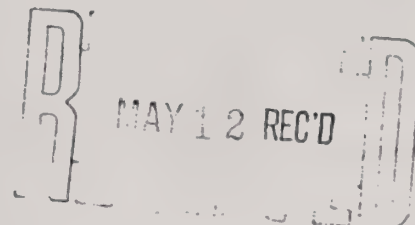


Division of Fisheries & Wildlife

Wayne F. MacCallum, *Director*

10 May 2000

Jennifer L. Gensel
Cortell Associates
244 Second Avenue
Waltham, MA 02451-1177



Re: Muddy River Phase I Improvements
Boston, MA
NHESP File: 98-4172

Dear Ms. Gensel,

Thank you for contacting the Natural Heritage and Endangered Species Program for information regarding state-protected rare species in the vicinity of the above referenced site. I have reviewed the site and would like to offer the following comments.

Our database indicates that the following state-protected rare species occur in the vicinity of the site:

Species

Pied-billed Grebe (*Podilymbus podiceps*)
Threespine Stickleback (*Gasterosteus aculeatus*)

Status

Endangered
Threatened

These species are protected under both the Massachusetts Endangered Species Act (M.G.L. c.131A) and its implementing regulations (321 CMR 10.00), and the state's Wetlands Protection Act (M.G.L. c.131) and its implementing regulations (310 CMR 10.00).

This evaluation is based on the most recent information available in the Natural Heritage database, which is constantly being expanded and updated through ongoing research and inventory. Should your site plans change, or new rare species information become available, this evaluation may be reconsidered.

Please do not hesitate to call me at (508) 792-7270 x154 if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Erica Payne".

Erica Payne
Environmental Review Assistant

Natural Heritage & Endangered Species Program

Route 135, Westborough, MA 01581 Tel: (508) 792-7270 x 200 Fax: (508) 792-7275
An Agency of the Department of Fisheries, Wildlife & Environmental Law Enforcement
<http://www.state.ma.us/dfwele/dfw>



Carlton L. Noyes Cortell
 Jennifer Gensel Cortell
 Marion Pressley Pressley Assoc.

781-890-3737 X128

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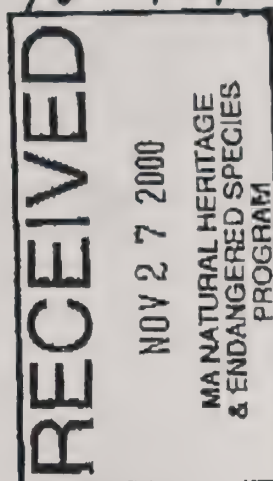
CORTELL
ASSOCIATES

Landscape Architect



DEIR 3/01

00-6803
 98.4172



November 20, 2000

Ms. Hanni Dinkaloo
 Natural Heritage and Endangered Species Program
 Massachusetts Division of Fisheries and Wildlife
 Route 135
 Westborough, MA 01581

RE: Threespine Stickleback and Pied-billed Grebe Habitat within the Muddy River System

Dear Ms. Dinkaloo:

The City of Boston and Town of Brookline will seek approval of aspects of the Muddy River Phase 1 Flood Control, Water Quality, Habitat Enhancement and Historical Preservation Project ("the Muddy River Project") under 310 CMR 10.53 (4) of the Wetland Protect Act Regulations which states that the issuing authority may:

"...issue an Order of Conditions for the projects which will improve the natural capacity of a resource area(s) to protect the interests identified in M.G.L. c 131...Such projects include, but are not limited to, the removal of aquatic nuisance vegetation to retard pond and lake eutrophication and the thinning or planting of vegetation to improve habitat value."

The regulation also states that no project:

"...may be permitted which will have any adverse effect on specified wildlife habitat sites of rare vertebrate or invertebrate species as identified by procedures established under 310 CMR 10.59)".

Vital to the permitting of the project, we must assure that the restoration project will have no adverse impact to the listed species with habitat within the site.

The Natural Heritage and Endangered Species Program (NHESP) has identified two listed species within the project site, the threespine stickleback

JASON M. CORTELL AND
ASSOCIATES INC.

Ms. Hanni Dinkaloo
November 20, 2000
Page 2

(*Gasterosteus aculeatus* Linnaeus) and the pied-billed grebe (*Podilymbus podiceps*). The purpose of this letter is to seek concurrence that the proposed work will both avoid adverse impact to their habitat and "improve the natural capacity" of relevant resource areas to provide habitat for these species.

A Draft Environmental Impact Report/Environmental Assessment (DEIR/EA) is being prepared that will demonstrate how the removal/replacement of invasive nuisance vegetation will benefit the wildlife in the area. Selected wetland replacement vegetation will have high wildlife values and soil and erosion stabilization qualities. In addition, replacement vegetation will stabilize banks, trap sediment, and create more diverse wildlife habitats as compared to existing conditions. The DEIR/EA also will describe the elements of the project intended to avoid adverse impact to the NHESP-listed species habitat and to enhance these areas, consistent with the following discussion.

Threespine Stickleback

As part of the DEIR/EA preparation, a wildlife habitat evaluation and a shoreline electroshocking survey of aquatic species was performed by LEC Environmental Consultants, Inc (LEC). Threespine stickleback was observed in a small, linear-shaped, shaded pond just upstream from Willow Pond known as Spring Pond. Water exiting Spring Pond flows through a 2-foot wide channel and discharges directly into Willow Pond via a degraded stone box culvert. Threespine stickleback also was observed within this channel and within Willow Pond only at the channel's discharge location. Threespine stickleback was not observed elsewhere with Willow Pond or within the project area. Figure 1 illustrates locations where the stickleback was observed.

Spring Pond contains water approximately 2-5 feet deep, and is fringed by glossy buckthorn (*Rhamnus frangula*), with red maple (*Acer rubrum*) samplings and pin oak (*Quercus palustris*) on the periphery. While the pond does receive overflow discharge from the upstream wetland, the primary water source is groundwater, hence its name. Spring Pond is considered the primary habitat for the threespine stickleback.

The primary breeding habitat for the threespine stickleback appears to be within Spring Pond. The water quality and characteristics of this pond make it ideal stickleback habitat. While some threespine stickleback have traveled through the channel and eventually ended up within Willow Pond, the channel and Willow Pond are not believed to be primary stickleback habitat. Water quality within Willow Pond is not as pristine as that of Spring Pond, whose temperature also tends to be cooler. This could explain why the threespine

JASON M. CORTELL AND
ASSOCIATES INC.

Ms. Hanni Dinkaloo
November 20, 2000
Page 3

stickleback was not observed in other parts of the Willow Pond, beyond the channel discharge.

The Muddy River Project will involve no work in Spring Pond. Work will include dredging of Willow Pond, and reconstructing the 2-foot wide channel and headwall into Willow Pond (see Figures 1 and 2). To minimize mortality of the threespine stickleback during construction, a net will be installed within Spring Pond across the entrance to the channel. This will prevent stickleback from migrating down through the channel to Willow Pond. During the initial dewatering process, an ecologist will electroshock areas of Willow Pond and the channel to stun any fish in the area. Any threespine stickleback located in the channel then will be captured with a hand net and returned to Spring Pond. This should result in a near zero mortality rate to the species.

The work proposed in Willow Pond has the long term potential to expand stickleback habitat by improving the water quality of Willow Pond. Dredging Willow Pond, implementing best management practices (BMPs), and planting high value wetland species will improve the water quality of Willow Pond to make it a viable habitat for the threespine stickleback and potentially expanding its breeding habitat into Willow Pond.

Pied-Billed Grebe

The pied-billed grebe prefers to nest in marshy areas adjacent to or within open water bodies. Preferred habitat includes areas with an abundant supply of cattails, reeds, and other aquatic vegetation that can be used as nesting material and cover. The pied-billed grebe was not observed during field investigations by LEC, nor was any evidence of nesting observed. LEC has identified potential habitat for nesting sites are on the so-called "historic" islands within Leverett Pond.

There are three historic islands in Leverett Pond (see Figures 3 and 4). The two larger islands are the original historic islands and currently are assumed to provide safe wildlife habitat, despite the lack of current nesting evidence for the grebe. They are not accessible to the public and will remain inaccessible. The third or center island was reconstructed in the 1980's. Plantings and the shape of the island were not successful and the island has minimal vegetative cover today. This island will be reshaped and planted in accordance with consideration for grebe habitat and with the Olmsted plant lists. The goal will be to replicate the other two islands and remain inaccessible to the public, thus providing safe wildlife habitat.

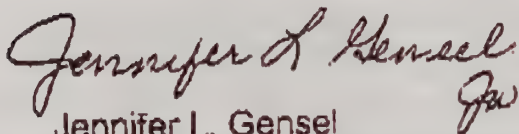
JASON M. CORTELL AND
ASSOCIATES INC.

Ms. Hanni Dinkaloo
November 20, 2000
Page 4

Work within Leverett Pond also will involve dredging. While this may result temporarily in undesirable habitat for the grebe, the design for the Leverett Pond Islands, including plantings and human inaccessibility will make the area a more desirable habitat in the long term. We'd like to explore with you methods to avoid or minimize temporary impacts when the grebe, a migratory bird with erratic nesting behavior, would not be expected to nest on the islands.

Feel free to call me at (781) 890 3737 x124, or Jacki Wilkins at x127 if we can provide additional information. We look forward to our meeting with NHESP on Wednesday, November 29, 2000 at 1:30 and will appreciate your feedback and suggestions on this plan.

Sincerely,



Jennifer L. Gensel
Environmental Resource Scientist

Cc: Patricia Huckery-Tower, NHESP

Commonwealth of Massachusetts



Division of Fisheries & Wildlife

Wayne F. MacCallum, *Director*

4 January 2001

Jennifer Gensel
Jason M. Cortell & Assoc.
244 Second Ave.
Waltham, MA 02451-1177

Re: Muddy River Restoration
Boston, MA
NHESP File #98-4172

Dear Jennifer,

Thank you for contacting the Natural Heritage and Endangered Species Program (NHESP) for information regarding state-protected rare species in the vicinity of the above referenced project. I have passed your letter on to Pat Huckery who is the Wetlands Environmental Reviewer at NHESP. Only she can make the determination whether the project will have an adverse impact on rare wetland wildlife under the Wetlands Protection Act. Because this project appears to occur solely within the wetland habitat of rare animals I will not be reviewing it under the Massachusetts Endangered Species Act since the WPA imposes stricter standards.

Sincerely,

A handwritten signature in dark ink, appearing to read "Hanni Dinkeloo".

Hanni Dinkeloo
Endangered Species Counsel



Natural Heritage & Endangered Species Program

Route 135, Westborough, MA 01581 Tel: (508) 792-7270 x 200 Fax: (508) 792-7821
An Agency of the Department of Fisheries, Wildlife & Environmental Law Enforcement



Division of Fisheries & Wildlife

Wayne F. MacCallum, *Director*

30 January 2001

Charlton L. Noyes
Jason M. Cortell and Associates, Inc.
244 Second Street
Waltham, MA 02451-1177

RE: Muddy River Phase 1 Flood Control, Water Quality, Habitat Enhancement and Historical Preservation Project (the Muddy River Project)
Boston and Brookline, MA
Preliminary review for possible rare species habitat impacts pursuant to the Wetlands Protection Act regulations (310 CMR 10.59)
NHESP File No. 98-4172

Dear Carl,

The Natural Heritage & Endangered Species Program (NHESP) has conducted a preliminary review of the proposed Muddy River Project for consistency with the rare species section of the Wetlands Protection Act regulations (310 CMR 10.59). The NHESP will not be reviewing the project under the Massachusetts Endangered Species Act (M.G.L. c.131A) because the Wetlands Protection Act imposes stricter standards for the aquatic species of concern in this system.

The rare wildlife species of concern in this project area is the threespine stickleback fish (*Gasterosteus aculeatus*). This trimorphic freshwater population is the only known occurrence in Massachusetts, and it is listed as "Threatened" pursuant to the Massachusetts Endangered Species Act (M.G.L. c.131A). This population survives within Spring Pond which drains into Willow Pond. Two rare pied-billed grebes (*Podilymbus podiceps*) have been reported from Leverett Pond, however breeding localities for this species within the Muddy River system are unknown. During the 29 November 2000 site visit, I did not see any marsh habitat within Leverett Pond or Willow Pond that would be suitable for breeding. In addition, the floating *Phragmites* mats at Agassiz Road near the Victory Garden are not likely breeding habitat due to the density of the plants. The only likely breeding habitat is a patch of cattail just upstream of the *Phragmites*, however, we have no documented breeding records from this site. Therefore, the NHESP will not be reviewing the proposed project for possible impacts to pied-billed grebe.

This review is based on information obtained during the 29 November 2000 site visit where Jacki Wilkins and Jennifer Gensel of Cortell Associates, and Marion Pressley joined us. I also reviewed correspondence to us from Cortell Associates dated 20 November 2000, and discussed the proposed project with Mark Chandler, a fish specialist at the New England Aquarium.

As currently proposed, the dredging project within Willow Pond would occur within an area that threespine sticklebacks were recently found by Paul Lelito, at the junction of Spring Pond stream



Natural Heritage & Endangered Species Program

Route 135, Westborough, MA 01581 Tel: (508) 792-7270 x 200 Fax: (508) 792-7821
An Agency of the Department of Fisheries, Wildlife & Environmental Law Enforcement
<http://www.state.ma.us/dfwele/dfw/nhesp>

and Willow Pond. A copy of Mr. Lelito's report should be submitted to the NHESP. It should include the Scientific Collecting Permit number, the survey date, a map of all the points within Spring Pond and Willow Pond that were electroshocked, the number of sticklebacks found at each point, their age and sex, any indications of breeding, record of any mortalities, as well as any other data that was collected about the fish or their habitat.

It is likely that the threespine sticklebacks found within Willow Pond are not successfully reproducing. During an earlier visit to the area in August 2000, Willow Pond was almost dry, except for a small pool where the Spring Pond stream enters. This pool was no more than a couple inches deep and aquatic plants were abundant. The sticklebacks are gaining access to Willow Pond through the Spring Pond stream; once they reach Willow Pond their return is blocked by an old collapsed culvert. Willow Pond may represent a population sink. Please note that the collapsed culvert also prevents movement of predatory fish into Spring Pond, to the benefit of the threespine stickleback population in Spring Pond.

There may be short term adverse effects to the habitat of the threespine sticklebacks in Willow Pond from the proposed dewatering and dredging project. However, due to the uncertainty regarding these impacts and the real possibility that restoration of Willow Pond would expand habitat for threespine sticklebacks, the NHESP recommends that you incorporate habitat enhancement and expansion measures for this species into the Muddy River Project. We fully support activities that will provide a net-benefit to this population, since we have concerns about the extirpation of the Spring Pond population from a catastrophic event, or long-term habitat degradation. This means that you should consider looking beyond just Willow Pond to expand and enhance habitat. As you design the habitat enhancement portion of the Muddy River Project, we recommend that you work closely with Mark Chandler of the New England Aquarium, an expert on the life history and habitat requirements of the threespine stickleback. I understand that you have already contacted him. Habitat enhancement, expansion and management plans should be submitted to the NHESP when filing under the Wetlands Protection Act Regulations.

We concur with your proposed method of minimizing or avoiding stickleback mortality during the actual dewatering and dredging of Willow Pond. Dewatering and dredging should occur during the summer, when most of Willow Pond will probably be dry and the fish will be concentrated within a smaller area, and so easier to capture and relocate.

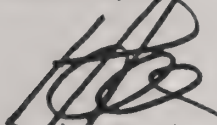
At this point, the NHESP would like to offer the following guidance when preparing habitat enhancement expansion plans for the threespine stickleback. The details of these recommendations should be worked out with the help of Mark Chandler. These recommendations may require work within Spring Pond and its outlet stream, as well as other wetlands. We understand that there will be permitting issues associated with these activities, but believe they are worthwhile for their long-term conservation value to the sticklebacks. The recommendations are as follows:

1. Expand habitat within Willow Pond.
 - a. Create shallow habitat shelf along margin of the pond.
 - b. Reintroduce native fish only.

- c. Monitor effectiveness and make necessary corrections.
2. Improve habitat within Spring Pond.
 - a. Characterize Spring Pond habitat – water quality, temperature, sediment types and depths, groundwater source, etc..
 - b. Correct existing erosion problems from gully and manholes.
 - c. Cautiously remove the existing sand plume created by gully erosion.
 - d. Determine whether nearby manhole is source of pollutants, and correct problem.
 - e. Restore buffer zone vegetation where feasible.
 - f. Reduce nutrient loads to pond; propose pooper scooper ordinance and provide appropriate signage. Prohibit feeding of geese.
3. Create additional pond.
 - a. Create within Willow Pond area; best location may be within the wetland upgradient to Spring Pond.
4. Devise management plan that includes a captive-breeding plan.

Please feel free to contact me should you have any questions about these preliminary comments and habitat enhancement recommendations.

Sincerely,



Patricia Huckery
Wetlands Environmental Reviewer

cc: J. Wilkins, Jason M. Cortell and Associates, Inc.
J. Sprague, DEP Northeast Regional Office
H. Dinkeloo, NHESP
Mark Chandler, NE Aquarium
file

**MEMORANDUM OF UNDERSTANDING
BY AND AMONG
THE EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS, THE DEPARTMENT OF
ENVIRONMENTAL MANAGEMENT, THE MASSACHUSETTS EMERGENCY MANAGEMENT
AGENCY, THE BOSTON WATER AND SEWER COMMISSION,
THE TOWN OF BROOKLINE AND THE CITY OF BOSTON
CONCERNING RESPONSIBILITIES FOR FUNDING AND ADMINISTERING
THE MUDDY RIVER RESTORATION PROJECT
IN THE CITY OF BOSTON AND THE TOWN OF BROOKLINE**

WHEREAS, Frederick Law Olmsted left the people of the nation and of the Commonwealth of Massachusetts a magnificent historic, cultural and environmental legacy of public parks and open spaces;

WHEREAS, in January of 1984 the Commonwealth of Massachusetts committed itself to reclaiming that legacy by creating the Olmsted Historic Landscape Preservation Program and the "Emerald Necklace Master Plan" of 1990; and, the Commonwealth's mission is to preserve significant historic landscapes and to encourage the public's appreciation, understanding, wise use and maintenance of this historic legacy;

WHEREAS, the health, safety and quality of life of the residents and communities of Boston and Brookline have been threatened by and subject to flooding, impaired water quality and degraded habitat related to the Muddy River in the Boston Park System known as the Emerald Necklace;

WHEREAS, in accordance with a Memorandum of Agreement ("MOA"), dated June 8, 1999, between the City of Boston and the Town of Brookline, the City of Boston has accepted responsibility for the implementation of the Emerald Necklace Environmental Improvements Master Plan and the Phase I Muddy River Flood Control, Water Quality, Landscape Restoration and Habitat Enhancement Project (EOEA# 11865) (the Plan and the projects contained therein and Phase I collectively referred to as the "Project", and the first portion of Phase I referred to as "Charlesgate");

WHEREAS, the Secretary of Environmental Affairs issued pursuant to the Massachusetts Environmental Policy Act, sections 61-62H of Chapter 30 of the General Laws and its associated regulations, a certificate, dated April 29, 1999, that establishes a special review procedure for the evaluation and review of the Project and a Citizen's Advisory Committee to enhance public participation in the entire Project, and a separate certificate concerning the scope of the required environmental impact report;

WHEREAS, the parties to this memorandum (hereinafter the "parties") believe it is appropriate to recognize and outline their respective roles relative to funding and administering the successful design, permitting and construction of Phase I (generally understood as estimated at approximately \$43,200,000) of the Project;

NOW, THEREFORE, in order to provide the required funds and related administration for the planning, permitting, and design of Phase I of the Project and the construction and implementation of Charlesgate, the parties hereto agree as follows:

1. The parties intend that the funds outlined herein will be transferred to the City of Boston for the purposes of planning, permitting and the design of Phase I and implementing and completing Charlesgate in a timely manner, and the parties understand that the City of Boston Parks and Recreation Department shall be the project manager for the Project;
2. The City of Boston will receive and expend these funds solely for Phase I, including Charlesgate, purposes, as mutually agreed among the parties, and in accordance with applicable federal, state and local laws, regulations and associated policies, including but not limited to those concerning bidding and procurement of construction or other services required for the Project;
3. The parties agree to cooperate and work together to ensure that all requirements of the various programs from which funds will be provided, including those concerning non-federal matching funds, are fulfilled;
4. A total of approximately \$7,100,000 is understood as the funding considered necessary for the total cost of the planning, designing, and permitting of Phase I and implementing, constructing and completing Charlesgate, and that these funds are anticipated from the following sources as further described:
 - a. The Massachusetts Emergency Management Agency and the Department of Environmental Management ("MEMA/DEM") will continue to seek final approval from the Federal Emergency Management Agency ("FEMA") Hazard Mitigation Grant Program for approximately \$2,300,000 in federal hazard mitigation funds, and should such approval be received, MEMA/DEM will enter into a contract with the City of Boston to provide these funds as described in the associated FEMA application. All parties agree to cooperate and continue to work together to secure these funds. Once a contract has been executed, the funds will be disbursed to the City of Boston on a reimbursable basis, pursuant to applicable regulations and the terms of the contract;
 - b. The \$790,242 in funds already provided by the United States Department of Housing and Urban Development ("HUD") through a federal fiscal year ("FFY") 1997 Community Development Block Grant ("CDBG") to MEMA (CDBG Disaster Recovery Initiative Grant Agreement #97-01 between MEMA and the City) will be disbursed to the City of Boston on a reimbursable basis, pursuant to applicable regulations and the terms of the grant agreement;
 - c. The additional \$1,500,000, that may be made available from HUD to MEMA through a grant under the FFY 1998 CDBG program, will be provided, if made available to the Commonwealth as anticipated, to the City of Boston through a grant contract to be negotiated between MEMA and the City of Boston. DEM and MEMA will complete and forward to HUD an action plan, as required by HUD, for the availability of these funds.

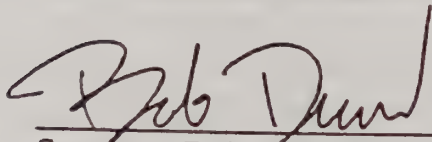
Upon approval of said action plan by HUD, the City of Boston will prepare and provide to MEMA a separate acceptable action plan and any other materials required for the expenditure of these grant funds. The funds will be disbursed to the City of Boston on a reimbursable basis, pursuant to applicable regulations, and expended in accordance with the terms of said contract;

- d. DEM will enter into an agreement with the City of Boston to provide a maximum of \$464,701, as appropriated by the Massachusetts Legislature in line item 2100-3012 of section 2 of Chapter 289 of the Acts of 1998, which shall be transferred to the City of Boston and expended in accordance with said agreement;
 - e. The Town of Brookline, through its Department of Public Works, agrees to transfer to the City of Boston, consistent with the above-referenced MOA, \$500,000, which is the totality of the town's share of Phase I, to be made available as part of the town's fiscal year 2001 capital budget;
 - f. The City of Boston agrees to commit the approximately \$45,700 in remaining funds originally provided by HUD to the city through the FFY 1997 CDBG Disaster Recovery Initiative program;
 - g. The Boston Water and Sewer Commission will transfer \$1,500,000, which is the totality of the commission's share of Phase I, to the City of Boston to be expended on Phase I;
5. The City of Boston and the Town of Brookline, upon the appropriate completion of the design, permitting and implementation and construction of Phase I or as otherwise provided in the maintenance and management plan approved as described in this paragraph, accept responsibility, including any costs, for their respective shares of future maintenance and management activities (not including capital improvement projects), including the implementation of best management practices, identified in an appropriate maintenance and management plan, submitted jointly by the city and the town to the Secretary of Environmental Affairs, that will be reviewed as part of the review for adequacy of the environmental impact report pursuant to MEPA; provided however, should the approximately \$7,100,000 identified in paragraph 4 not be provided, the city and the town may limit or, if necessary, cease their involvement with the Project.
 6. The City of Boston agrees, in consultation with and subject to the approval of the parties, to establish and comply with reasonable and well-defined schedules for the design, permitting and construction of Phase I upon receipt of funding as outlined in this memorandum.
 7. Nothing in this memorandum, except as expressly stated, shall be construed to diminish, enlarge or modify any right or liability of any of the parties, or create liability on the part of any public agency for the act or omission of another public agency or a private person. Nothing in this memorandum shall be construed to amend, repeal or otherwise alter the authority or jurisdiction of any public agency.

8. The parties acknowledge the importance of the tasks outlined in this memorandum and the monumental undertaking required for successful completion of Phase I as well as the entire Project. In recognition of this and of the significance of the Emerald Necklace to its constituents and that successful restoration cannot be achieved except through the collective cooperation of the parties, each party to this memorandum agrees to cooperate relative to the Project to ensure the preservation and protection of this unique Olmsted park system.

9. The effective date of this memorandum shall be the date of execution by the last of the parties to sign.

For the Executive Office of
Environmental Affairs:


Secretary Robert Durand

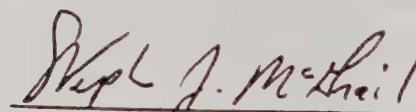
Date: 11/11/99

For the Department of
Environmental Management:


Commissioner Peter Webber

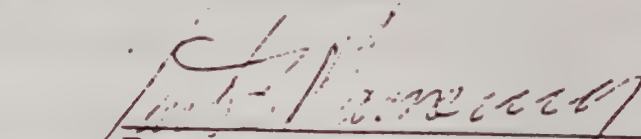
Date: 11/2/99

For the Massachusetts Emergency
Management Agency:


Director Stephen J. McGrail

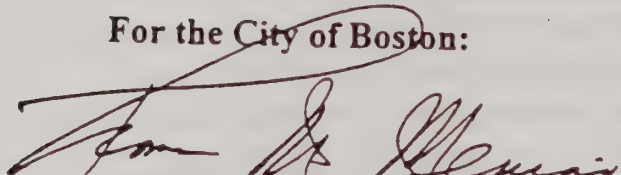
Date: 11-1-99

For the Boston Water and
Sewer Commission:


Executive Director Vincent G. Mannering

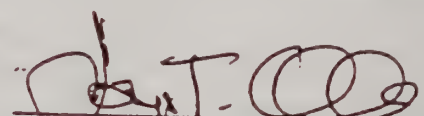
Date: 10/29/99

For the City of Boston:


Mayor Thomas M. Menino

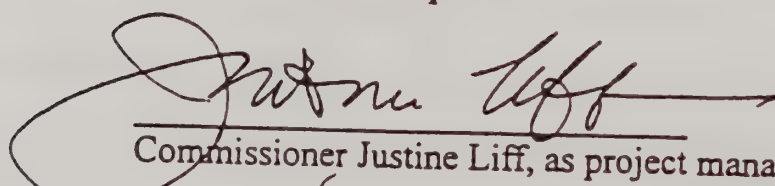
Date: 11/4/99

For the Town of Brookline:


Selectman Joseph Geller, Chairman

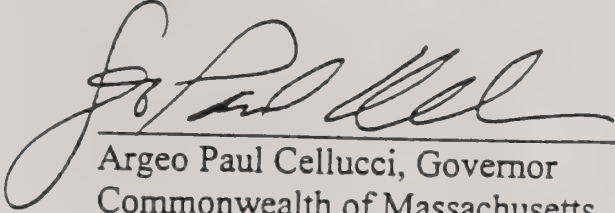
Date: 11.4.99

For the Boston Parks
and Recreation Department:


Commissioner Justine Liff, as project manager

Date: 11/4/99

I, Argeo Paul Cellucci, Governor of the Commonwealth of Massachusetts, celebrate the significant progress of the parties to this memorandum in advancing the restoration objectives as outlined herein, commend the cooperative relationship that has developed among public and private groups in furtherance of these objectives, and recognize the need for continuing commitment by the parties to ensure the future health of the Muddy River, an integral component of the historic landscape legacy of Frederick Law Olmsted, Sr.



Argeo Paul Cellucci, Governor
Commonwealth of Massachusetts

Date: 11/14/99

Muddy River Restoration Project
Pre-Application Review Committee (PRC)

2025

First Name	Last Name	Job Title	Company	Address 1	Address 2	City	State	Postal Code	Work Phone	Title	Suffix
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Richard	McGuinness	Executive Director	Boston Conservation Commission	Room 805 100 Cambridge Street	Boston City Hall	Boston	MA	02201	635-4417	Mr.	
Erin	Chute	Conservation Administrator	Brookline Conservation Commission	333 Washington Street		Brookline	MA	02445	730-2088	Ms.	
John P.	Sullivan	Chief Engineer	Boston Water & Sewer Commission	425 Summer Street		Boston	MA	02210-1700	330-9400	Mr.	, Jr., P.E.
Steven G.	Lipman	Special Projects Coordinator	Department of Environmental Protection	One Winter Street		Boston	MA	02108	292-5500	Mr.	, P.E.
Judith	Perry		Department of Environmental Protection	One Winter Street		Boston	MA	02108	292-5500	Ms.	
David	Slagle	Wetlands & Watersheds Division	Department of Environmental Protection	205A Lowell Street		Wilmington	MA	01887	978-661-7600	Mr.	
Rachael	Freed		Department of Environmental Protection	205A Lowell Street		Wilmington	MA	01887	978-661-7600	Ms.	

Muddy River Restoration Project
Pre-Application Review Committee (PRC)

FirstName	LastName	JobTitle	Company	Address1	Address2	City	State	PostalCode	WorkPhone	Title	Suffix
Richard	Thibedeau	Chief Planner	Department of Environmental Management	100 Cambridge Street		Boston	MA	02202	626-1396	Mr.	
Judith B.	McDonough	Executive Director	Massachusetts Historical Commission	220 Morrissey Boulevard		Boston	MA	02125	727-8470	Ms.	
Greg	Penta		U. S. Army Corps of Engineers	696 Virginia Road		Concord	MA	01742-2751	978-318-8862	Mr.	
Jane	Downing	Director, Mass. Office of Environmental Protection	U. S. Environmental Protection Agency	J. F. Kennedy Federal Building		Boston	MA	02203-2211	918-1571	Ms.	
Richard L.	Keller		Massachusetts Division of Fisheries and Wildlife	Field Headquarters	One Rabbit Hill Road	Westborough	MA	01581		Mr.	
Phillip	Morrison		U. S. Fish and Wildlife Service	22 Bridge Street	Unit No. 1	Concord	NH	03301-4986	603-225-1411	Mr.	
Peter D.	Colosi	Assistant Regional Administrator	National Marine Fisheries Service	One Blackburn Drive		Gloicester	MA	01930	978-281-9300	Mr.	

BOSTON

Thomas M. Menino, Mayor

March 27, 2000

Mr. Peter D. Colosi
Assistant Regional Administrator
National Marine Fisheries Service
One Blackburn Drive
Gloucester, MA 01930

RE: Muddy River Restoration Project

Dear Mr. Colosi:

The purpose of this letter is to request your participation in a Pre-application Review Committee (PRC) for project permitting on the Muddy River Restoration Project located in the City of Boston and Town of Brookline. Due to the urgency of the flood control work, the Secretary's Certificate allows the dredging in the Charlesgate area to commence as soon as the draft Environmental Impact Report (EIR) is accepted and the environmental permits/approvals are issued. Any additional elements of the project will commence once the final EIR is accepted.

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Work on the Project began with the formation of the Citizens Advisory Committee in compliance with Secretary Durand's Certificate which established a Special Review Procedure. Several CAC meetings have already taken place. However, before planning and engineering can proceed, we and our consultants need to review with you some important aspects of the forthcoming project and in particular some upcoming field work.

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Boston Parks and Recreation Department • Justine M. Liff, Commissioner
1010 Massachusetts Ave., Boston, MA 02118 / Tel.: (617) 635-4505 / Fax: 635-3173



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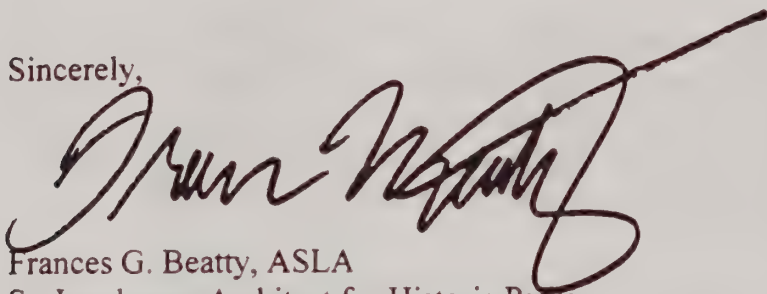
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We look forward to working with you on the Muddy River Restoration Project.

Sincerely,



Frances G. Beatty, ASLA
Sr. Landscape Architect for Historic Parks

cc: Laura Rome – EOEPA MEPA Unit
Richard McGuinness - Boston Conservation Commission
Erin Chute - Brookline Conservation Commission
John P. Sullivan, Jr. – Boston Water & Sewer Commission
Steven G. Lipman - DEP Special Projects Coordinator
Judith Perry – DEP Main Office, Water Quality Certification
Rachael Freed - DEP Northeast Regional Office, Wetlands and Waterways
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Jeffrey A. Bean - FEMA
Richard Keller - Massachusetts Division of Fisheries and Wildlife
Phillip Morrison - U.S. Fish and Wildlife Service
Peter D. Colosi - National Marine Fisheries Service

BOSTON

Thomas M. Menino, Mayor

March 27, 2000

Mr. Phillip Morrison
U. S. Fish and Wildlife Service
22 Bridge Street
Unit No. 1
Concord, NH 03301-4986

RE: Muddy River Restoration Project

Dear Mr. Morrison:

The purpose of this letter is to request your participation in a Pre-application Review Committee (PRC) for project permitting on the Muddy River Restoration Project located in the City of Boston and Town of Brookline. Due to the urgency of the flood control work, the Secretary's Certificate allows the dredging in the Charlesgate area to commence as soon as the draft Environmental Impact Report (EIR) is accepted and the environmental permits/approvals are issued. Any additional elements of the project will commence once the final EIR is accepted.

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Richard Keller - Massachusetts Division of Fisheries and Wildlife
Phillip Morrison - U.S. Fish and Wildlife Service
Peter D. Colosi - National Marine Fisheries Service

BOSTON

Thomas M. Menino, Mayor

March 27, 2000

Mr. Richard L. Keller
Massachusetts Division of Fisheries and Wildlife
Field Headquarters
One Rabbit Hill Road
Westborough, MA 01581

RE: Muddy River Restoration Project

Dear Mr. Keller:

The purpose of this letter is to request your participation in a Pre-application Review Committee (PRC) for project permitting on the Muddy River Restoration Project located in the City of Boston and Town of Brookline. Due to the urgency of the flood control work, the Secretary's Certificate allows the dredging in the Charlesgate area to commence as soon as the draft Environmental Impact Report (EIR) is accepted and the environmental permits/approvals are issued. Any additional elements of the project will commence once the final EIR is accepted.

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Boston Parks and Recreation Department • Justine M. Liff, Commissioner
1010 Massachusetts Ave., Boston, MA 02118 / Tel.: (617) 635-4505 / Fax: 635-3173



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Sr. Landscape Architect for Historic Parks

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Phillip Morrison - U.S. Fish and Wildlife Service
Peter D. Colosi - National Marine Fisheries Service

BOSTON

Thomas M. Menino, Mayor

March 27, 2000

Ms. Jane Downing
Director, Mass. Office of Ecosystem Protection
U. S. Environmental Protection Agency
J. F. Kennedy Federal Building
Boston, MA 02203-2211

RE: Muddy River Restoration Project

Dear Ms. Downing:

The purpose of this letter is to request your participation in a Pre-application Review Committee (PRC) for project permitting on the Muddy River Restoration Project located in the City of Boston and Town of Brookline. Due to the urgency of the flood control work, the Secretary's Certificate allows the dredging in the Charlesgate area to commence as soon as the draft Environmental Impact Report (EIR) is accepted and the environmental permits/approvals are issued. Any additional elements of the project will commence once the final EIR is accepted.

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Peter D. Colosi - National Marine Fisheries Service

BOSTON

Thomas M. Menino, Mayor

March 27, 2000

Ms. Judith B. McDonough
Executive Director
Massachusetts Historical Commission
220 Morrissey Boulevard
Boston, MA 02125

RE: Muddy River Restoration Project

Dear Ms. McDonough:

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Sincerely,



Frances G. Beatty, ASLA
Sr. Landscape Architect for Historic Parks

cc: Laura Rome – EOE MEPA Unit
Richard McGuinness - Boston Conservation Commission
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Peter D. Colosi - National Marine Fisheries Service

BOSTON

Thomas M. Menino, Mayor

March 27, 2000

Mr. Richard Thibedeau
Chief Planner
Department of Environmental Management
100 Cambridge Street
Boston, MA 02202

RE: Muddy River Restoration Project

Dear Mr. Thibedeau:

The purpose of this letter is to request your participation in a Pre-application Review Committee (PRC) for project permitting on the Muddy River Restoration Project located in the City of Boston and Town of Brookline. Due to the urgency of the flood control work, the Secretary's Certificate allows the dredging in the Charlesgate area to commence as soon as the draft Environmental Impact Report (EIR) is accepted and the environmental permits/approvals are issued. Any additional elements of the project will commence once the final EIR is accepted.

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Boston Parks and Recreation Department • Justine M. Liff, Commissioner
1010 Massachusetts Ave., Boston, MA 02118 / Tel.: (617) 635-4505 / Fax: 635-3173

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Peter D. Colosi - National Marine Fisheries Service

BOSTON

Thomas M. Menino, Mayor

March 27, 2000

Ms. Rachael Freed
Department of Environmental Protection
205A Lowell Street
Wilmington, MA 01887

RE: Muddy River Restoration Project

Dear Ms. Freed:

The purpose of this letter is to request your participation in a Pre-application Review Committee (PRC) for project permitting on the Muddy River Restoration Project located in the City of Boston and Town of Brookline. Due to the urgency of the flood control work, the Secretary's Certificate allows the dredging in the Charlesgate area to commence as soon as the draft Environmental Impact Report (EIR) is accepted and the environmental permits/approvals are issued. Any additional elements of the project will commence once the final EIR is accepted.

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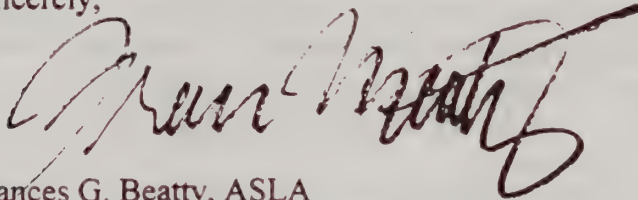
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BOSTON

Thomas M. Menino, Mayor

March 27, 2000

Mr. David Slagle
Wetlands & Waterways Division
Department of Environmental Protection
205A Lowell Street
Wilmington, MA 01887

RE: Muddy River Restoration Project

Dear Mr. Slagle:

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BOSTON

Thomas M. Menino, Mayor

March 27, 2000

Ms. Judith Perry
Department of Environmental Protection
One Winter Street
Boston, MA 02108

RE: Muddy River Restoration Project

Dear Ms. Perry:

The purpose of this letter is to request your participation in a Pre-application Review Committee (PRC) for project permitting on the Muddy River Restoration Project located in the City of Boston and Town of Brookline. Due to the urgency of the flood control work, the Secretary's Certificate allows the dredging in the Charlesgate area to commence as soon as the draft Environmental Impact Report (EIR) is accepted and the environmental permits/approvals are issued. Any additional elements of the project will commence once the final EIR is accepted.

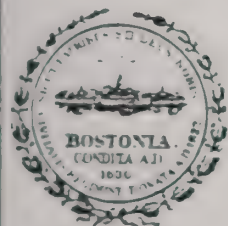
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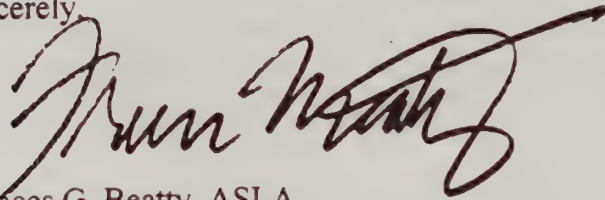
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BOSTON

Thomas M. Menino, Mayor

March 27, 2000

Mr. Steven G. Lipman, P.E.
Special Projects Coordinator
Department of Environmental Protection
One Winter Street
Boston, MA 02108

RE: Muddy River Restoration Project

Dear Mr. Lipman:

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BOSTON

Thomas M. Menino, Mayor

March 27, 2000

Mr. John P. Sullivan, Jr., P.E.
Chief Engineer
Boston Water & Sewer Commission
425 Summer Street
Boston, MA 02210-1700

RE: Muddy River Restoration Project

Dear Mr. Sullivan:

The purpose of this letter is to request your participation in a Pre-application Review Committee (PRC) for project permitting on the Muddy River Restoration Project located in the City of Boston and Town of Brookline. Due to the urgency of the flood control work, the Secretary's Certificate allows the dredging in the Charlesgate area to commence as soon as the draft Environmental Impact Report (EIR) is accepted and the environmental permits/approvals are issued. Any additional elements of the project will commence once the final EIR is accepted.

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BOSTON

Thomas M. Menino, Mayor

March 27, 2000

Ms. Erin Chute
Conservation Administrator
Brookline Conservation Commission
333 Washington Street
Brookline, MA 02445

RE: Muddy River Restoration Project

Dear Ms. Chute:

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BOSTON

Thomas M. Menino, Mayor

March 27, 2000

Mr. Richard McGuiness
Executive Director
Boston Conservation Commission
Room 805
Boston City Hall
Boston, MA 02201

RE: Muddy River Restoration Project

Dear Mr. McGuiness:

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The Boston Parks and Recreation Department's consultant team is headed by Camp Dresser & McKee Inc (CDM). CDM is assisted by Jason M. Cortell and Associates Inc. who will prepare the EIR and environmental permits; Pressley Associates Inc. who will provide landscape architectural and historical resource design; and Vanasse Hangen Brustlin, Inc. who will provide traffic planning and mitigation design.

Through a series of meetings with the PRC, we wish to reach consensus on how key project issues will be handled including several issues that we view as important baseline work on the project. These include:

- Wetland delineation
- Sediment and soil pre-characterization protocol
- Habitat restoration versus wetland alteration protocol
- Alternatives analysis
- Permit approach and review schedule
- Interagency coordination

Boston Parks and Recreation Department • Justine M. Liff, Commissioner
1010 Massachusetts Ave., Boston, MA 02118 / Tel.: (617) 635-4505 / Fax: 635-3173



The following draft meeting list is proposed and it can be modified as necessary:

- **April 25, 2000** - Introduction to the Project and key issues and sediment pre-characterization (2 hours)
 - Late April or early May - Field trip (2 hours) – date to be determined at the April 25th meeting.
 - Subsequent meeting schedule to be determined
- Our first meeting is scheduled for **Tuesday, April 25, 2000 at 10:00 AM**. The meeting location will be CDM's office at One Cambridge Place, 50 Hampshire Street, in Cambridge. (At the reception desk, ask for Bruce Conklin.)

If you have any problems with this meeting date, please do not hesitate to call the Boston Parks Department's project manager John Burckardt at 617-635-4505, extension 6517.

We look forward to working with you on the Muddy River Restoration Project.

Sincerely,



Frances G. Beatty, ASLA
Sr. Landscape Architect for Historic Parks

cc: Laura Rome – EOE MEPA Unit
Richard McGuiness - Boston Conservation Commission
Erin Chute - Brookline Conservation Commission
John P. Sullivan, Jr. – Boston Water & Sewer Commission
Steven G. Lipman - DEP Special Projects Coordinator
Judith Perry – DEP Main Office, Water Quality Certification
Rachael Freed - DEP Northeast Regional Office, Wetlands and Waterways
David Slagle - DEP Northeast Regional Office, Wetlands and Waterways
Richard Thibedeau – Department of Environmental Management
Judith B. McDonough - Massachusetts Historical Commission
Greg Penta – Army Corps of Engineers
Jane Downing – Environmental Protection Agency
Jeffrey A. Bean - FEMA
Richard Keller - Massachusetts Division of Fisheries and Wildlife
Phillip Morrison - U.S. Fish and Wildlife Service
Peter D. Colosi - National Marine Fisheries Service

BOSTON

Thomas M. Menino, Mayor

March 27, 2000

Ms. Laura Rome
MEPA Office
100 Cambridge Street
Boston, MA 02202

RE: Muddy River Restoration Project

Dear Ms. Rome:

The purpose of this letter is to request your participation in a Pre-application Review Committee (PRC) for project permitting on the Muddy River Restoration Project located in the City of Boston and Town of Brookline. Due to the urgency of the flood control work, the Secretary's Certificate allows the dredging in the Charlesgate area to commence as soon as the draft Environmental Impact Report (EIR) is accepted and the environmental permits/approvals are issued. Any additional elements of the project will commence once the final EIR is accepted.

Since this is a vitally important public benefit project and it is complex in nature, we believe the formation of a PRC will expedite the overall implementation of the project as well as assure that sufficient information is provided for the regulatory agencies to review the project in a timely manner. The PRC process has been used successfully on a number of projects in Massachusetts and we suggest that the Muddy River Restoration Project is another project worthy of this level of effort and commitment.

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Boston Parks and Recreation Department • Justine M. Liff, Commissioner
1010 Massachusetts Ave., Boston, MA 02118 / Tel.: (617) 635-4505 / Fax: 635-3173

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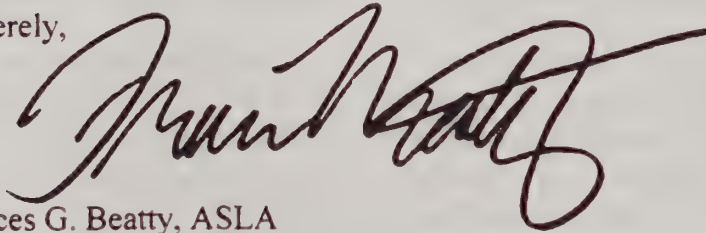
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David Slagle - DEP Northeast Regional Office, Wetlands and Waterways
Richard Thibedeau – Department of Environmental Management
Judith B. McDonough - Massachusetts Historical Commission
Greg Penta – Army Corps of Engineers
Jane Downing – Environmental Protection Agency
Jeffrey A. Bean - FEMA
Richard Keller - Massachusetts Division of Fisheries and Wildlife
Phillip Morrison - U.S. Fish and Wildlife Service
Peter D. Colosi - National Marine Fisheries Service

**MUDDY RIVER FLOOD CONTROL, WATER QUALITY AND HABITAT
ENHANCEMENT PROJECT**

**AGENDA
PRE-APPLICATION REVIEW COMMITTEE**

April 25, 2000

- I Opening Remarks**
Fran Beatty – Senior Landscape Architect, Boston Parks and Recreation
Commission, Emerald Necklace Project Manager
- II Purpose of the Pre-application Review Committee (PRC)**
Carlton L. Noyes – Deputy Project Manager, Jason M. Cortell and
Associates Inc.
- III Permitting Sequence**
Carlton L. Noyes
- IV Project Overview**
Bruce R. Conklin, P.E. – Project Manager, Camp Dresser & McKee Inc.
- V Sediment Characterization Plan**
Carole Kaslick, Camp Dresser & McKee Inc.
- VI Water Quality Sampling Plan**
Carlton L. Noyes
- VII Limited Project Permitting (310 CMR 10.53)**
Jason M. Cortell, President – Cortell and Associates Inc.
- VIII Future Meetings**
Bruce R. Conklin
- IX Questions and Answers**

MUDDY RIVER RESTORATION PROJECT

PRE-APPLICATION REVIEW COMMITTEE MEETING - APRIL 25, 2000

NAME	AGENCY	PHONE	EMAIL
JAY CORTELL	PRETEL	781-890-3737 x111	cortell@cartell.com
Bruce Conklin	CDM	617-452-6543	conklinbr@cdm.com
Bryon Clemence	CDM	617 452 6524	clemenceb@cdm.com
Steve Cipriani	DEP/COMM	617 292-5618	Steve.Cipriani@state.ma.us
Judy Perry	DEP/WW	617-292-5655	judy.perry@state.ma.us
Rachel Freed	DEP/WW	978/661-7783	rachel.freed@state.ma.us
FRAN DEATY	BOS. PARKS DEPT.	617-635-4505	FRANDEATY@ci.BOSTON.MA.US
John Burekardt	PB c/o Boston Parks Dept	617-635-4505	j.burekardt@ci.boston.ma.us
Laura Rome	EOEA/MEPA	617-626-1030	laura.rome@state.ma.us
Carlton Noyes	Cartell + Assoc	781 890 3737 x128	Cartell + Assoc
PAUL W. KEOHAN	BOSTON WATER & SEWER COMM	617/330-9900	KEOHANP@BWSA.OECI
CONOR KASLUK	CDM	617-452-6123	kaskluk@cdm.com
Erin Chute	Blackline Conservation	617-730-2088	erin-chute@blacklineconservation.com
Greg Pata	Corps of Engineers	978-318-8862	gregory.g.pata@usace.army.mil

BOSTON

Thomas M. Menino, Mayor

To: Richard McGuinness
Boston Conservation Commission

From: John Burckhardt
Muddy River Project

Date: April 28, 2000

RE: Pre-Application Review Meeting

On April 25, 2000, the first meeting of the Muddy River Pre-Application Review Committee (PRC) was held at Camp Dresser & McKee's offices. An agenda and attendance list is attached.

I am forwarding to you a full set of handouts from the meeting. The main topic was an early discussion of the sediment sampling plan and the water quality sampling plan. Due to the borings required, the sediment sampling program will also be included in the Notice of Intent for the boring work.

If you have any questions, you may call me at 635-4505 x6517



Boston Parks and Recreation Department • Justine M. Liff, Commissioner
1010 Massachusetts Ave., Boston, MA 02118 / Tel.: (617) 635-4505 / Fax: 635-3173

CDM Transmittal

CDM Camp Dresser & McKee Inc.

50 Hampshire Street
Cambridge, MA 02139
617-452-6543
617-452-8543

To:	Distribution	From:	Bruce Conklin
Company:		Date:	April 27, 2000
Re:	PreApplication Review Committee Meeting		
Job #:	1517-28449	Work Group #:	1210
Via:	Mail: X	Overnight:	Courier:

For your information	☒	Approved	☐
For your review	☐	Approved as noted	☐
For your signature	☐	Returned to you for correction	☐

● **Message:**

Attached are the agenda and hand outs from the 2/28/00 and 3/30/00 Citizens Advisory Committee meetings handed out at the Pre Application Review Committee meeting held on 4/25/00.

Distribution:
Richard McGuinness
David Slagle
Richard Thibedeau
Judith McDonough
Richard Keller
Phillip Morrison
Peter Colosi

Cc: John Burckardt

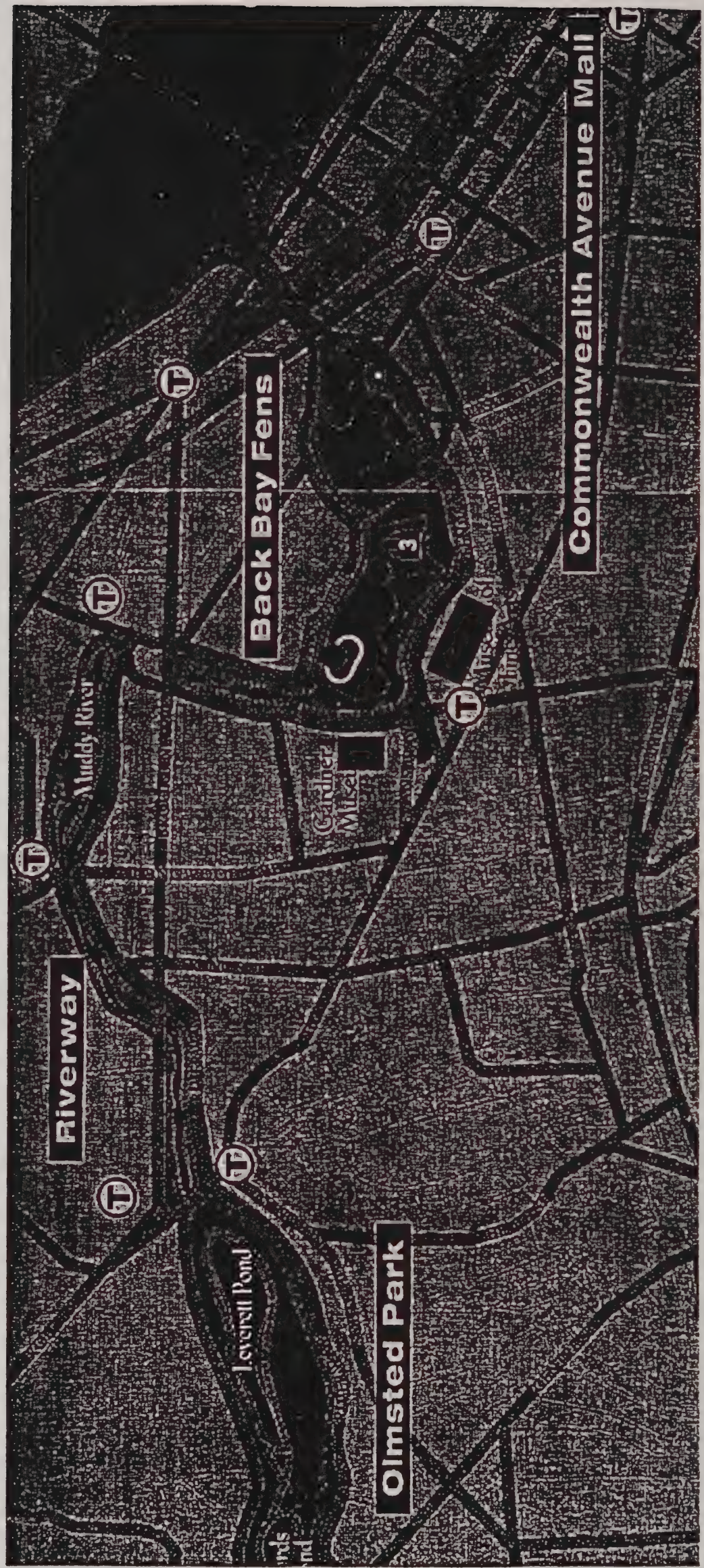
**MUDDY RIVER FLOOD CONTROL, WATER QUALITY AND HABITAT
ENHANCEMENT PROJECT**

**AGENDA
PRE-APPLICATION REVIEW COMMITTEE**

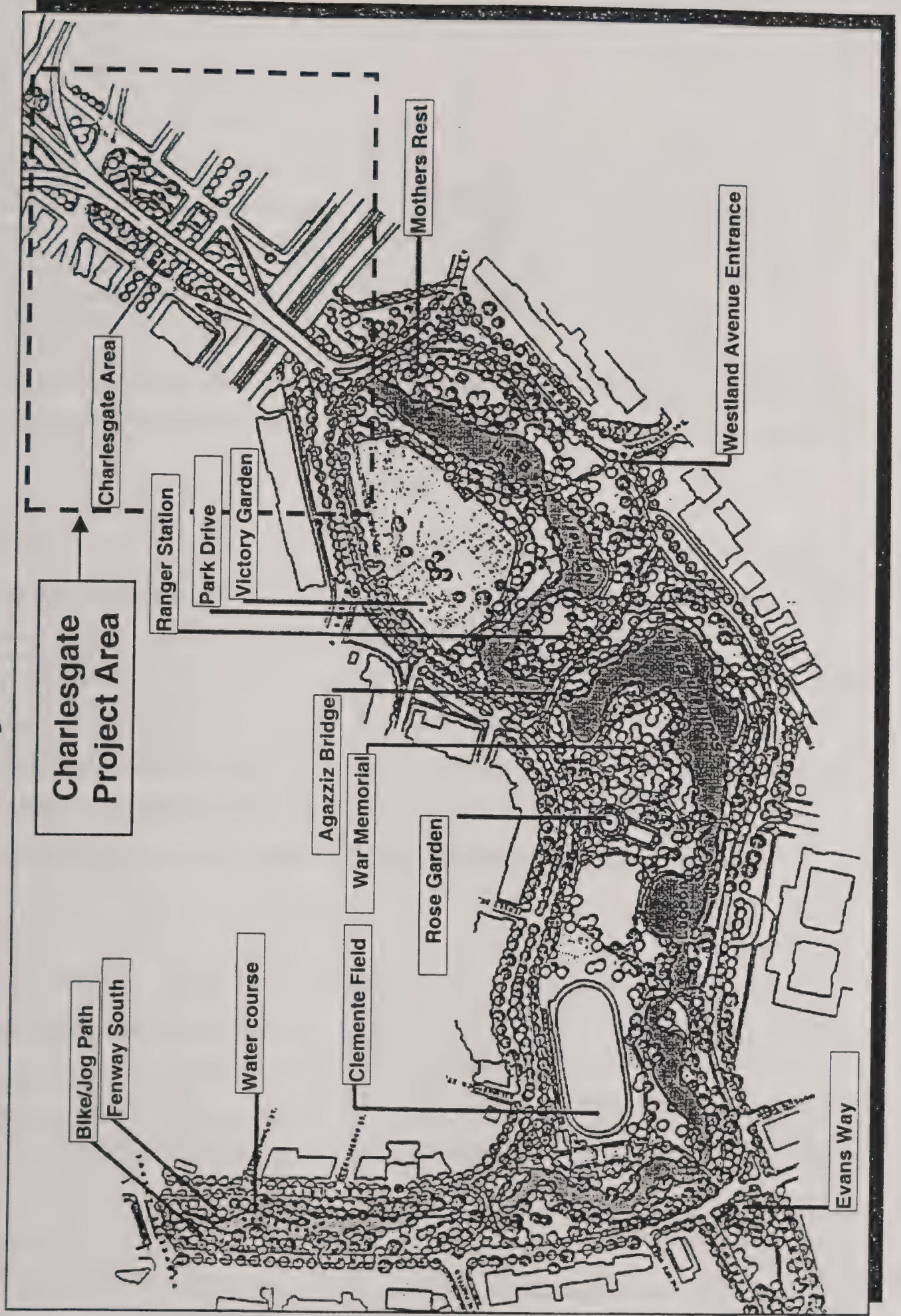
April 25, 2000

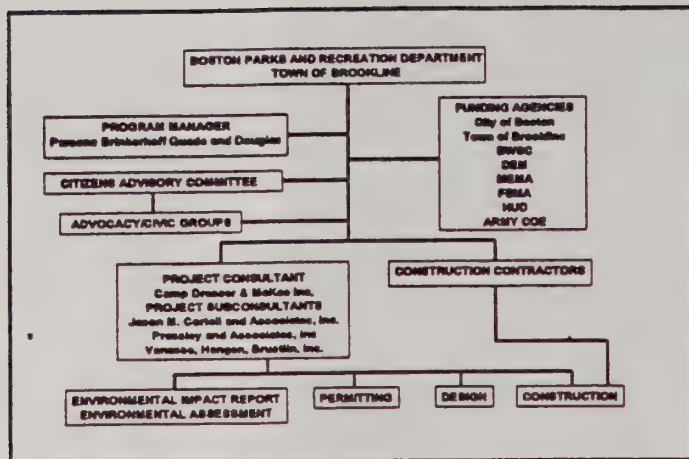
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- IX Questions and Answers**

Phase 1 Project Area



Charlesgate Area Project





Camp Dresser & McKee Inc.

Muddy River
Restoration Project

Overview and CAC Topics

David Noonan PE,
Bruce Conklin PE,
Carlton Noyes

Staff and Roles

■ Camp Dresser & McKee Inc.

- David Noonan, P.E.

- Bruce Conklin, P.E.

- Paul Dermit

■ Jason M. Cortell and Associates, Inc.

- Jason M. Cortell

- Carlton Noyes

Staff and Roles

- Pressley and Associates, Inc.
 - Marion Pressley, FASLA
 - Gary Clalborne
- Vanasse, Hangen, Brustlin, Inc.
 - Joseph Magni

Additional Subconsultants (1 of 2)

- Green International Affiliates, Inc. - Topographic Survey, Wetland Flag Survey
- LEC Environmental - Habitat Studies
- GConn - Construction Consulting
- GeoTek Engineering - Geotechnical borings, Sediment Sampling
- CDM Jessberger - Geotechnical Engineering

Additional Subconsultants (2 of 2)

- Dr. Charles Beveridge - Historian
- AMRO - Laboratory Analytical Testing
- Toxikon - Laboratory Analytical Testing

Phase 1 Project Area



Project Objectives

- Provide flood control
- Improve water quality
- Enhance aquatic / riparian habitat
- Restore landscape and historic resources
- Institute Best Management Practices (BMP) in Muddy River system

Project Elements

- Environmental Impact Report / Environmental Assessment (EIR/EA)
- Preliminary Design
- Permitting
- Final Design
- Construction Services

Phase 1 Project (1 of 3)

- Phase 1 is first part of multiphase project
- MEPA Certificate identifies Phase 1 scope and Annual Updates
- Phase 1 area includes:
 - Charlesgate, Back Bay Fens, Riverway
 - Leverett Pond, Willow Pond, Ward's Pond

Phase 1 Project (2 of 3)

- Phase 1 Scope includes:
 - Flood control
 - Water quality improvements
 - Habitat enhancement
 - Best Management Practices Plan for watershed
 - Develop historic landscape restoration plan
 - Restoration of disturbed landscape areas

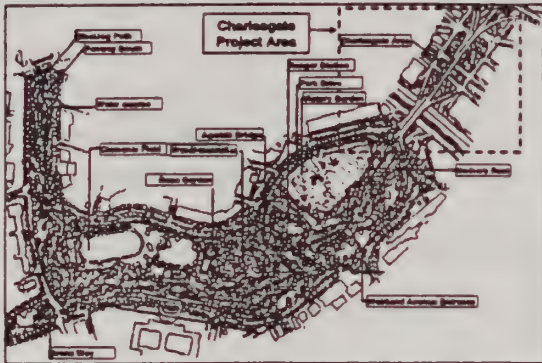
Phase 1 Project (3 of 3)

- Post-Phase 1 Work
 - Continue landscape restoration and improvements
 - Continue historic restoration
 - Traffic improvements
 - Bridge / building restoration

Phase 1 Project Area



Charlesgate Area Project

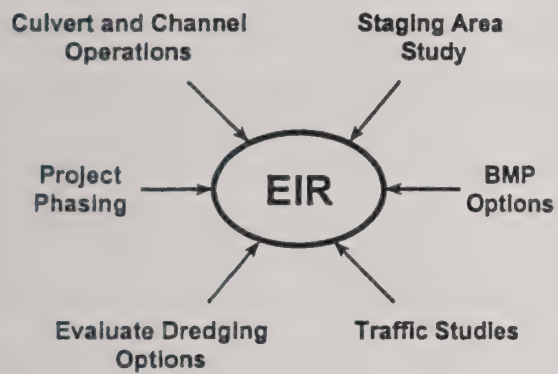


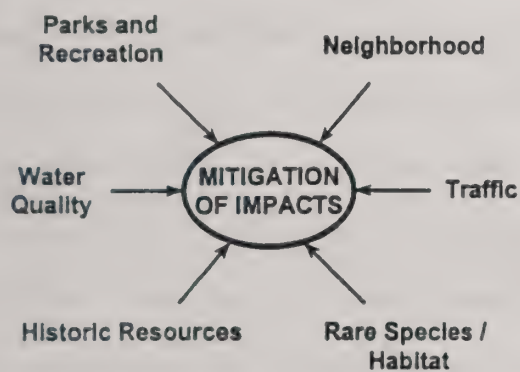
Phase 1 Project(s) after Charlesgate

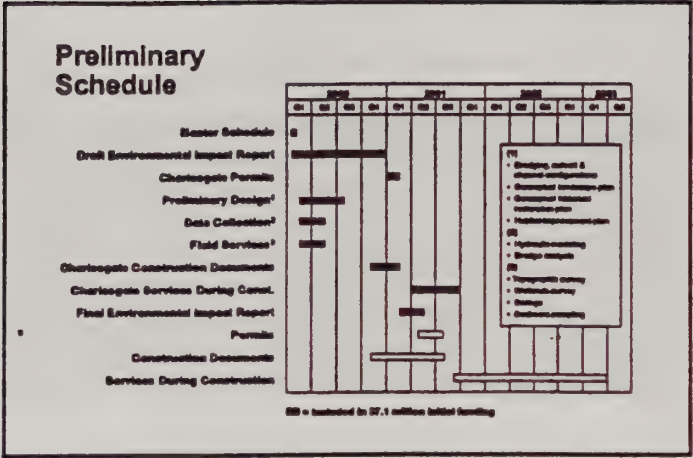
- Alternative projects identified in Environmental Impact Report / Environmental Assessment
- Construction contract(s) identified and packaged

Work Elements

- Master Schedule
- Environmental Impact Report / Environmental Assessment
 - Describe existing conditions
 - Analyze project alternatives
 - Describe impacts of proposed project(s)
 - Mitigation measures for project(s)
 - Monitoring & Maintenance (Post Construction)
- Engineering Elements
- Mitigation of Impacts







Proposed CAC Meeting Topics - 2000 (1 of 2)

Project Alternative Identification	March
BMP Alternatives	April
Rare Species / Habitat Improvements	May
Historic Resources Evaluation	June

Proposed CAC Meeting Topics - 2000 (2 of 2)

Culvert / Open Channel Options / Dredging & Disposal Options	July & August
Staging Areas / Traffic and Pedestrian Issues	Sept
Alternatives Evaluation and Cost	October
Mitigation / Implementation	November
EIR/EA Presentation	December

Questions and Answers

Camp Dresser & McKee Inc.

Muddy River Restoration Project

Alternatives for Evaluation

March 30, 2000

Bruce Conklin PE,
Carlton Noyes

Project Objectives

- Provide flood control
- Improve water quality
- Enhance aquatic/riparian habitat
- Restore landscape and historic resources
- Institute Best Management Practices (BMPs)
in the Muddy River system

Project Objective: Provide Flood Control (1 of 3)

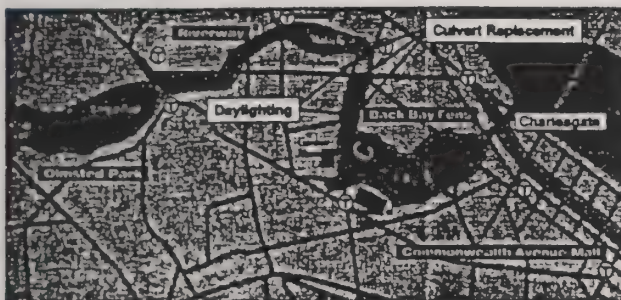
Alternatives:

- Daylight culverted sections of the Muddy River (former Sears Lot, adjacent to Avenue de Louis Pasteur)
 - No action
 - Engineered channel
 - "Natural" replacement
- Culvert replacement (adjacent to former Sears Lot and Avenue de Louis Pasteur)
 - No action
 - Culvert enlargement
 - Jacked culvert

Project Objective:
Provide Flood Control (2 of 3)

- Open channel areas of Muddy River
 - No Action
 - Dredge the Charlesgate Area only
 - Partially dredge a flood control channel in the Back Bay Fens and spot dredging in the Riverway
 - Fully dredge the Back Bay Fens, Riverway and other sections of the Muddy River to Ward's Pond
- Flood proofing of property

Phase 1 Project Area



Dredging Sediments



Charlesgate Channel



Leverett Pond

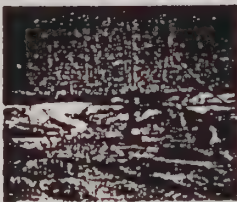
Project Objective:
Provide Flood Control (3 of 3)

- Alternative types of dredging
 - Dredge in the dry
 - Drag line dredging
 - Environmental clamshell bucket dredging
 - Gradall dredging
 - Conventional hydraulic dredging
 - High solids hydraulic dredging (Toyo-type pump)

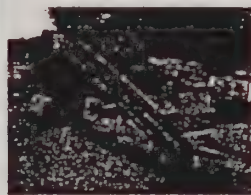
Dredging Methods



Mudcat Dredge



Toyo Pump



Dewatering Sediments

Project Objective:
Improve Water Quality (1 of 2)

Alternatives:

- No Action
- Dredging
 - Reduces heavy metals and organic compounds in sediments
 - Reduces oxygen demand and nutrient recycling
- Point Source Control
 - Eliminate illegal sewer connections
 - Reduces coliform, nutrients and solids; increases dissolved oxygen
 - Sewer separation
 - Reduces coliform, nutrients and solids; increases dissolved oxygen

Project Objective:
Improve Water Quality (2 of 2)

- Implement Best Management Practices (non-point source control)
 - Reduces suspended solids loading and floatables
 - Reduce discharges of runoff contaminants
 - Increases dissolved oxygen
- Flow Augmentation
 - Increases dissolved oxygen
- In-Stream Aeration
 - Increases dissolved oxygen
- Off-Stream Aeration
 - Increases dissolved oxygen

Water Quality Degradation



Project Objective:
Enhance Aquatic/Riparian Habitat (1 of 2)

Alternatives:

- No Action
- Dredging
 - Reduces bio-accumulation in endemic species
 - Increases aquatic/riparian habitat
- Point Source Control
 - Reduces coliform, nutrients and solids; increases dissolved oxygen
- Implement Best Management Practices (non-point source control)
 - Reduces suspended solids loading and discharges of runoff contaminants improving aquatic habitat
 - Increases dissolved oxygen

Project Objective:
Enhance Aquatic/Riparian Habitat (2 of 2)

- **Flow Augmentation**
 - Increases dissolved oxygen improving aquatic habitat
- **In-Stream Aeration**
 - Increases dissolved oxygen improving aquatic habitat
- **Off-Stream Aeration**
 - Increases dissolved oxygen improving aquatic habitat
- **Remove non-native Invasive Species**
 - Increases bio-diversity
- **Plant Wetland and Riparian Vegetation**
 - Increases species bio-diversity, habitat and edge effect
- **Restores historic islands**
 - Protects riparian habitat

1924-25 - Water vegetation has aquatic and upland plantings, (Thomas Ellison, photographer, Frederick Law Olmsted National Historic Site).



1907 - View downstream from Chapel St. Bridge (American Landscape Architecture, 1924).



1920 - Boston Park System Muddy River Improvement. View upstream from the Longwood Avenue Bridge, twenty-eight years after construction (Thomas Ellison, photographer, Frederick Law Olmsted National Historic Site).



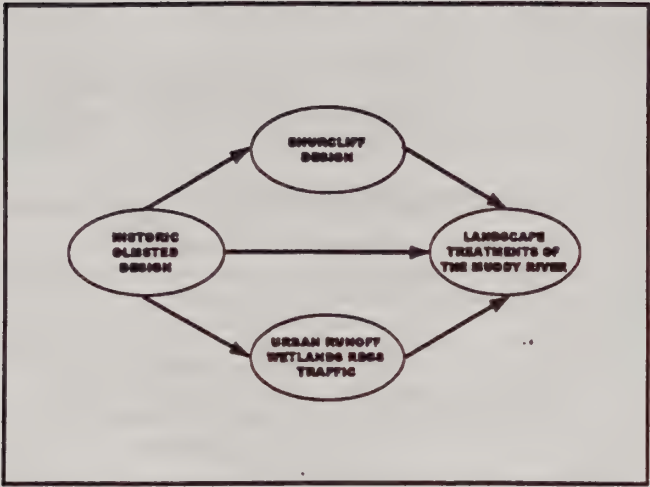
Project Objective:
Treatment of Landscaping and Historic Resources
(1 of 2)

Alternatives:

- No Action
- Develop a Treatment Planting Plan to respect the Emerald Necklace Master Plan, 1990 ("the continuum")
 - Develop a historic landscape treatment plan
 - Fully dredge the Muddy River and thereby restoring the historic drainage capacity
 - Remove non-native invasive species
 - Daylight and restore the culverted section at Avenue de Louis Pasteur and former Sears parking lot
 - Restore the historic islands in the Muddy River

Project Objective:
Treatment of Landscaping and Historic Resources
(2 of 2)

- Restore the island and banks at Avenue de Louis Pasteur to the Olmsted design
- Enhance wetland and riparian habitat using as much of the Olmsted species list as possible
- Develop a Treatment Planting Plan to respect the Emerald Necklace Master Plan, 1990 ("the continuum")
 - Develop a historic landscape treatment plan
 - Fully dredge the Muddy River and thereby restoring the historic drainage capacity
 - Remove non-native invasive species
 - Daylight and restore the culverted section at Avenue de Louis Pasteur and former Sears parking lot
 - Restore the historic islands in the Muddy River



Project Objective:
Institute Best Management Practices (BMPs) in
the Muddy River System (1 of 3)

Alternatives:

- No Action
- Implement Best Management Practices - Source Control Options
 - Public education (NS)
 - Material disposal and recycling (NS)
 - Spill prevention - Underground and above ground storage tank program (NS)
 - Illegal dumping control (NS)
 - Illicit connection control
 - Detection/removal (S/NS)

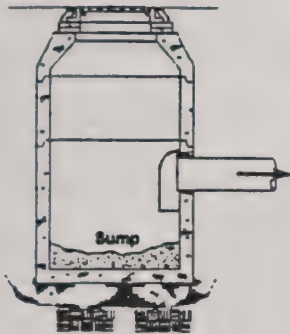
NS - Non structural options, S - Structural options

Project Objective:
Institute Best Management Practices (BMPs) in
the Muddy River System (2 of 3)

- Implement Best Management Practices - Source Control Options (continued)
 - Street/storm drain maintenance
 - Repair/replace roadway curbing (S)
 - Repair/replace sunken roadway catch basins (S)
 - Install deep sump drop inlets on roadways (S)
 - Repair washouts (S)
 - Develop catch basin cleaning and maintenance program (NS)
 - Develop street sweeping program (NS)

NS - Non structural options, S - Structural options

Sediment Storing Catch Basin



Project Objective:

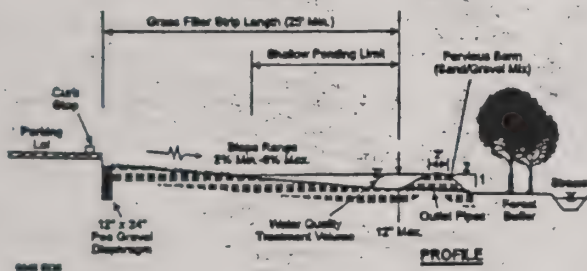
Institute Best Management Practices (BMPs) In the Muddy River System (3 of 3)

■ Implement Best Management Practices - Treatment Control Options (S)

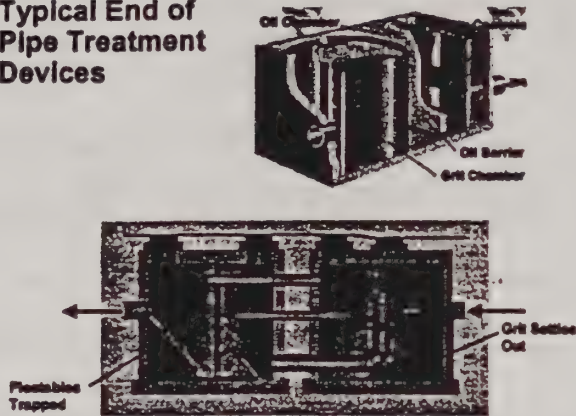
- Install solids separation devices on existing storm sewers
- Install solids separation devices on new or retrofitted storm sewers
- Install wet or dry detention basins
- Install forebays
- Install infiltration trenches
- Water quality swales
- Install in-line sedimentation basins during dredging

NS - Non structural options, S - Structural options

Typical Water Quality Swale



Typical End of Pipe Treatment Devices



Alternatives That Impact Objectives

Alternatives	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Site Action					
Design current facilities					
Design improvements					
Design conceptual plan					
Design design the site					
Design design the site					
Design design the site					
Design design the site					
Point Source Controls					
Point Source Controls					
Point Source Controls					
Point Source Controls					
Nonpoint Source Controls					
Nonpoint Source Controls					
Nonpoint Source Controls					
Nonpoint Source Controls					
Regulatory Compliance					
Regulatory Compliance					
Regulatory Compliance					
Regulatory Compliance					
Other					
Other					
Other					
Other					

Project Objective: List of Environmental Permits/Approvals

- Notice of Intent/Order of Conditions (310 CMR 10.00) - Boston & Brookline Conservation Commissions
- Water Quality Certification (314 CMR 9.00) - Department of Environmental Protection
- Department of the Army Permit (Section 10 of the Rivers and Harbors Act of 1889, Section 404 of the Clean Water Act) - Army Corps of Engineers
- Ch.91 Waterways Licensing (310 CMR 9.00) - Department of Environmental Protection
- National Pollutant Discharge Elimination System Permit (CFR 124.15) - Environmental Protection Agency
- Historic Preservation Act (Sect 106)
 - Massachusetts Historic Commission
 - Boston Landmarks
 - Brookline Preservation

Alternatives That Impact Objectives

Alternatives	Provide Flood Control	Improve Water Quality	Enhance Aquatic/Riparian Habitat	Treat Landscape/Historic Resources	Institute BMPs
No Action					•
Daylight culvert sections	•				
Culvert replacement	•				
Dredge Charlesgate area	•				
Partially dredge the river	•		•	•	
Fully dredge the river	•		•	•	
Flood proofing of property					•
Point source controls			•	•	
Flow augmentation			•	•	
In-stream aeration			•	•	
Off-stream aeration			•	•	
Remove non-native invasive species					
Plant wetland/riparian vegetation	•			•	•
Restore historic islands				•	•
Develop treatment plan respecting master plan				•	
Develop treatment plan respecting periods of significance				•	
Source control BMPs			•		•
Treatment control BMPs			•		•

Questions and Answers

BOSTON

Thomas M. Menino, Mayor

MUDDY RIVER RESTORATION PROJECT

MEMORANDUM

DATE: April 13, 2000

TO: Bruce Conklin, CDM

FROM: John Burckardt *JFB*

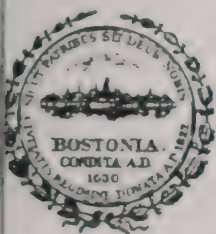
RE: Pre-Application Review Committee
Phone Conversation with National Marine Fisheries Services

Today, I spoke with Eric Hutchins of the National Marine Fisheries Services (returning a call I made to Peter Colosi). Eric stated that *NMFS would not attend the PRC*. Rather, NMFS has expressed its concerns in its comment letters to the Corps regarding their work to date on the Muddy River. Even though the current project may differ in details (e.g., means of dredging), NMFS does not believe this detail changes any of the concerns that were indicated in these previous comments. Eric Hutchins is familiar with the Muddy River and the proposed project and was the author of some comment letters.

Basically, NMFS is concerned with the Charles. Anything that would reduce flow to the Charles could be a concern. For any method of dredging, NMFS's concern is that the sediments are contained and do not reach the Charles.

Eric Hutchins thanked us for inviting NMFS.

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Boston Parks and Recreation Department • Justine M. Liff, Commissioner
1010 Massachusetts Ave., Boston, MA 02118 / Tel.: (617) 635-4505 / Fax: 635-3173



Division of Fisheries & Wildlife

Wayne F. MacCallum, *Director*

April 3, 2000

Frances G. Beatty, ASLA
Boston Parks and Recreation
1010 Massachusetts Avenue
3rd Floor, Boston, MA 02118

Dear Frances:

I thank-you for the invitation to serve on a Pre-Application Review Committee for project permitting on the Muddy River Restoration Project. At this time I find myself unable to commit having recently been assigned to serve on several additional resource teams by the Secretariat in addition to the committees, project teams and boards that I traditionally serve on. If I can be of assistance in directing any questions relating to fish and wildlife concerns, please feel free to contact me at (508) 792-7270 ext. 137 or at Dkeller@state.ma.us.

Sincerely;

Richard L. Keller

Richard L. Keller
Aquatic Biologist, MDFW

RECEIVED
5 April 2000 FBM

Division of Fisheries & Wildlife

Field Headquarters, One Rabbit Hill Road, Westborough, MA 01581 (508) 792-7270 • Fax 792-7270

An Agency of the Department of Fisheries, Wildlife & Environmental Law Enforcement

BOSTON

Thomas M. Menino, Mayor

September 28, 2000

Mr. Peter D. Colosi
Assistant Regional Administrator
National Marine Fisheries Service
One Blackburn Drive
Gloucester, MA 01930

RE: Muddy River Restoration Project
Site Walk-Through

Dear Mr. Colosi:

I am writing to invite the members of the Pre-application Review Committee (PRC) for the Muddy River Restoration Project to a site visit.

At the initial PRC meeting in April, it was suggested that the PRC take part in a walk-through of the project area to discuss specific issues of interest to the regulators. At the time, it was proposed that this site visit would occur after the wetland delineations are reviewed and accepted by the local Conservation Commissions. With these hearings concluded in September, we have scheduled the visit as follows:

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Please reply to me by **October 12, 2000**, to let me know:

- If you are planning to attend;
- Any specific sites you would like the itinerary to include; and
- Any specific issues you would like to discuss during the walk-through.

I can be reached as follows:

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c/o Boston Parks & Recreation Department
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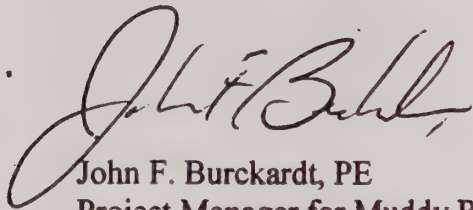


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We will also schedule a meeting of the PRC after the site visit to discuss regulatory issues and how they will be included in the Draft Environmental Impact Report, scheduled for submission early in 2001.

We appreciated your ongoing work with the Muddy River Restoration Project.

Sincerely,



John F. Burckardt, PE
Project Manager for Muddy River Restoration

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Richard McGuiness - Boston Conservation Commission
Erin Chute - Brookline Conservation Commission
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copies: Fran Beatty, BP&R
Bruce Conklin, CDM
Carl Noyes, JMCA

BOSTON

Thomas M. Menino, Mayor

September 28, 2000

Mr. Phillip Morrison
U. S. Fish and Wildlife Service
22 Bridge Street
Unit No. 1
Concord, NH 03301-4986

RE: Muddy River Restoration Project
Site Walk-Through

Dear Mr. Morrison:

I am writing to invite the members of the Pre-application Review Committee (PRC) for the Muddy River Restoration Project to a site visit.

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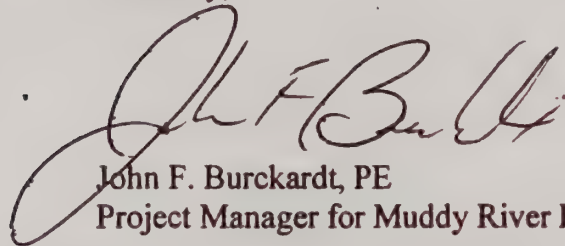


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Project Manager for Muddy River Restoration

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BOSTON

Thomas M. Menino, Mayor

September 28, 2000

Mr. Richard L. Keller
Massachusetts Division of Fisheries and Wildlife
Field Headquarters
One Rabbit Hill Road
Westborough, MA 01581

RE: Muddy River Restoration Project
Site Walk-Through

Dear Mr. Keller:

I am writing to invite the members of the Pre-application Review Committee (PRC) for the Muddy River Restoration Project to a site visit.

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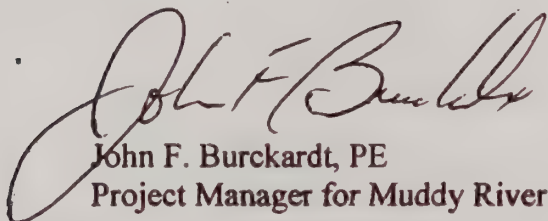


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BOSTON

Thomas M. Menino, Mayor

September 28, 2000

Ms. Jane Downing
Director, Mass. Office of Ecosystem Protection
U. S. Environmental Protection Agency
J. F. Kennedy Federal Building
Boston, MA 02203-2211

RE: Muddy River Restoration Project
Site Walk-Through

Dear Ms. Downing:

I am writing to invite the members of the Pre-application Review Committee (PRC) for the Muddy River Restoration Project to a site visit.

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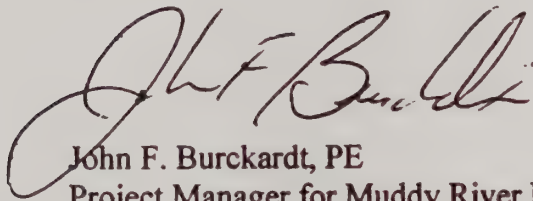
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We appreciated your ongoing work with the Muddy River Restoration Project.

Sincerely,



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BOSTON

Thomas M. Menino, Mayor

September 28, 2000

Ms. Judith B. McDonough
Executive Director
Massachusetts Historical Commission
220 Morrissey Boulevard
Boston, MA 02125

RE: Muddy River Restoration Project
Site Walk-Through

Dear Ms. McDonough:

I am writing to invite the members of the Pre-application Review Committee (PRC) for the Muddy River Restoration Project to a site visit.

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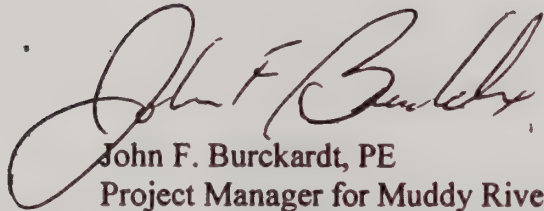
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BOSTON

Thomas M. Menino, Mayor

September 28, 2000

Mr. Richard Thibedeau
Chief Planner
Department of Environmental Management
251 Causeway Street
Boston, MA 02114

RE: Muddy River Restoration Project
Site Walk-Through

Dear Mr. Thibedeau:

I am writing to invite the members of the Pre-application Review Committee (PRC) for the Muddy River Restoration Project to a site visit.

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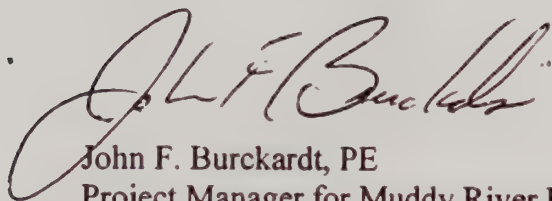
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Project Manager for Muddy River Restoration

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BOSTON

Thomas M. Menino, Mayor

^{Sept}
~~March~~ 27, 2000

Mr. David Slagle
Wetlands & Waterways Division
Department of Environmental Protection
205A Lowell Street
Wilmington, MA 01887

RE: Muddy River Restoration Project
Site Walk-Through

Dear Mr. Slagle:

I am writing to invite the members of the Pre-application Review Committee (PRC) for the Muddy River Restoration Project to a site visit.

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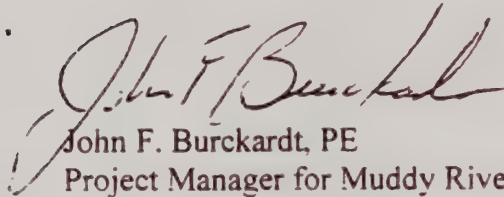
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BOSTON

Thomas M. Menino, Mayor

Sept
~~March~~ 27, 2000

Ms. Judith Perry
Department of Environmental Protection
One Winter Street
Boston, MA 02108

RE: Muddy River Restoration Project
Site Walk-Through

Dear Ms. Perry:

I am writing to invite the members of the Pre-application Review Committee (PRC) for the Muddy River Restoration Project to a site visit.

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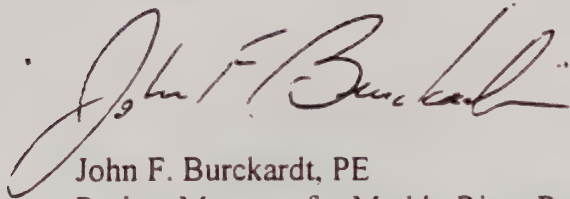


Ms. Judith Perry
March 27, 2000
Page 2

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BOSTON

Thomas M. Menino, Mayor

^{Sept}
~~March~~ 27, 2000

Ms. Rachael Freed
Department of Environmental Protection
205A Lowell Street
Wilmington, MA 01887

RE: Muddy River Restoration Project
Site Walk-Through

Dear Ms. Freed:

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I can be reached as follows:

John Burckardt
c/o Boston Parks & Recreation Department
1010 Massachusetts Avenue, 3rd Floor
Boston, MA 02118
(617) 635-4505 (617) 635-3256 FAX
jburckard@ci.boston.ma.us

Boston Parks and Recreation Department • Justine M. Liff, Commissioner
1010 Massachusetts Ave., Boston, MA 02118 / Tel.: (617) 635-4505 / Fax: 635-3173



Ms. Rachael Freed
March 27, 2000
Page 2

We will also schedule a meeting of the PRC after the site visit to discuss regulatory issues and how they will be included in the Draft Environmental Impact Report, scheduled for submission early in 2001.

We appreciated your ongoing work with the Muddy River Restoration Project.

Sincerely,



John F. Burckardt, PE
Project Manager for Muddy River Restoration

distribution: Laura Rome – EOEPA MEPA Unit
Richard McGuinness - Boston Conservation Commission
Erin Chute - Brookline Conservation Commission
John P. Sullivan, Jr. – Boston Water & Sewer Commission
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Peter D. Colosi - National Marine Fisheries Service

copies: Fran Beatty, BP&R
Bruce Conklin, CDM
Carl Noyes, JMCA

BOSTON

Thomas M. Menino, Mayor

Sept,
~~March~~ 27, 2000

Mr. Steven G. Lipman, P.E.
Special Projects Coordinator
Department of Environmental Protection
One Winter Street
Boston, MA 02108

RE: Muddy River Restoration Project
Site Walk-Through

Dear Mr. Lipman:

I am writing to invite the members of the Pre-application Review Committee (PRC) for the Muddy River Restoration Project to a site visit.

At the initial PRC meeting in April, it was suggested that the PRC take part in a walk-through of the project area to discuss specific issues of interest to the regulators. At the time, it was proposed that this site visit would occur after the wetland delineations are reviewed and accepted by the local Conservation Commissions. With these hearings concluded in September, we have scheduled the visit as follows:

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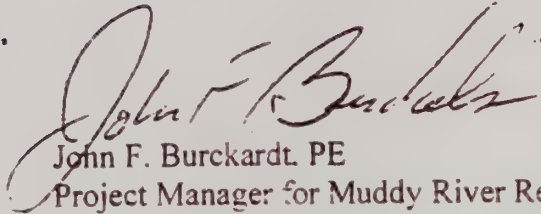
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Bruce Conklin, CDM
Carl Noyes, JMCA

BOSTON

Thomas M. Menino, Mayor

September 28, 2000

Mr. John P. Sullivan, Jr., P.E.
Chief Engineer
Boston Water & Sewer Commission
425 Summer Street
Boston, MA 02210-1700

RE: Muddy River Restoration Project
Site Walk-Through

Dear Mr. Sullivan:

I am writing to invite the members of the Pre-application Review Committee (PRC) for the Muddy River Restoration Project to a site visit.

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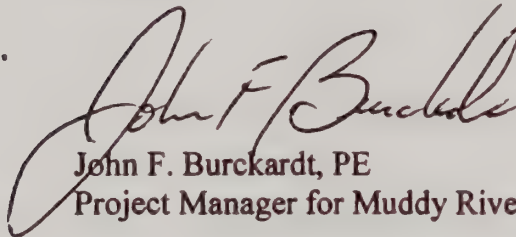
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BOSTON

Thomas M. Menino, Mayor

September 28, 2000

Ms. Erin Chute
Conservation Administrator
Brookline Conservation Commission
333 Washington Street
Brookline, MA 02445

RE: Muddy River Restoration Project
Site Walk-Through

Dear Ms. Chute:

I am writing to invite the members of the Pre-application Review Committee (PRC) for the Muddy River Restoration Project to a site visit.

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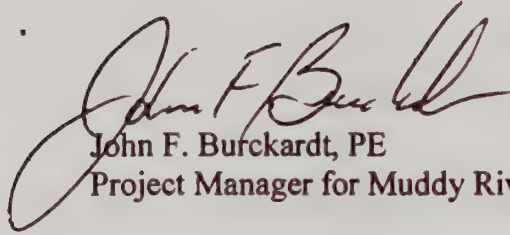
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Project Manager for Muddy River Restoration

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 Carl Noyes, JMCA

BOSTON

Thomas M. Menino, Mayor

Sept.
~~March~~ 27, 2000

Mr. Richard McGuinness
Executive Director
Boston Conservation Commission
Room 805
Boston City Hall
Boston, MA 02201

RE: Muddy River Restoration Project
Site Walk-Through

Dear Mr. McGuinness:

I am writing to invite the members of the Pre-application Review Committee (PRC) for the Muddy River Restoration Project to a site visit.

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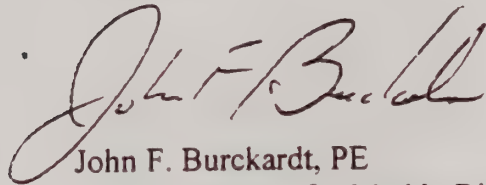


Mr. Richard McGuiness
March 27, 2000
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Carl Noyes, JMCA

BOSTON

Thomas M. Menino, Mayor

September 28, 2000

Ms. Laura Rome
MEPA Office
251 Causeway Street
Boston, MA 02114

RE: Muddy River Restoration Project
Site Walk-Through

Dear Ms. Rome:

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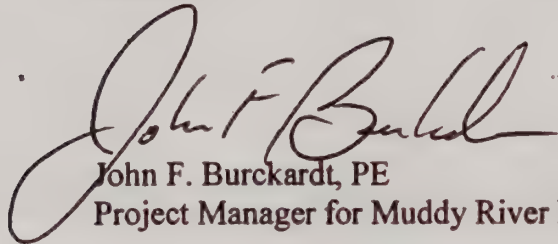


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October 20, 2000

Muddy River Site Visit
Pre Application Review Committee

<u>Name</u>	<u>Agency</u>	<u>Phone #/email</u>
Peter Phippen	EOEA Charles Team Leader	617 626 1174
Richard Thibodeau	DEM	Peter.phippen@state.ma. 617 973-8781
Steve Lyman	DEP	617-292-5698
Rachel Freed	DEP	978/661-7783
Laura Rome	EOEA/MEPA	617-626-1030
CHRISTINE PLAYER	DEM-WATERWAYS	781-740-1600 X117
Michael Driscoll	DEM - WATERWAYS	" "
Marion Pressley	Pressley Assoc.	617-491-5300
Yvonne Unger	DEP - Wetlands Waterway	617 292-5893
John Carrigan	DEP - BWP/DIRT	617 292-5584
Bruce Conklin	CDM	617-452-6543
Fran Beatty	PAMA	617-635-4505
Joe Nadeau	MEMA	508-820-1445
Keith Tonn	DEM	508-820-2007
Erin Chute	Bk. Conservation	617-730-2088
Rich McGuinness	Boston Con Comm	635-9112
Jeanne Mottallam	Boston Con Comm	635-4417
Carla Mays	Corbett	781, 890-3737 X128
John Burckhardt	PO BPR	635-4505
Megan Raymond	LEC Environmental	617 508 759 0050
Paul Lelito	"	

**Third Pre Application Review Committee Meeting
December 7, 2000**

(Material to be provided)

BOSTON

Thomas M. Menino, Mayor

EMERALD NECKLACE
ENVIRONMENTAL IMPROVEMENTS MASTER PLAN
AND
PHASE I MUDDY RIVER FLOOD CONTROL, WATER QUALITY,
HABITAT ENHANCEMENT AND HISTORIC PRESERVATION

Meeting Notes

Pre-Application Review Meeting
March 14, 2001

Northeastern University, 26 Tavern Road, 1st Floor Conference Room

Attendance:

See attached list.

Opening Remarks:

Jack Malone welcomed all on behalf of the Technical Advisory Committee

John Burckardt welcomed the representatives of the regulatory agencies and gave a brief project status update (see attachment).

Presentation:

Bruce Conklin made a presentation on proposed project elements (see attachment).

Question and Answers:

Following the presentation, a question and answer discussion followed. The following is a sample of comments made:

- In reply to a question, the consultants noted that habitat enhancement will not be at the expense of historic considerations. The proposed habitat enhancements are an integrated design that respects historic, wetlands, and habitat considerations.
- DEP noted that the table of regulations in the EIR should include Massachusetts's Section 401 regulations.
- DEP commented that where dredging is not required for flood control, be sure the justification for dredging is well articulated in the EIR.
- DEP expressed concern over "in-stream" sedimentation basins. If there is a feasible option for basins or control outside the stream, that would be preferred.
 - Basins in the stream do not always work as proposed.
 - Their maintenance requires disturbance of wetlands resource areas.
 - DEP stormwater policy is against this practice.

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Boston Parks and Recreation Department • Justine M. Liff, Commissioner
1010 Massachusetts Ave., Boston, MA 02118 / Tel.: (617) 635-4505 / Fax: 635-3173

- Basins may not be aesthetically pleasing
- Maintenance will cause sediment disturbance (turbidity).
- The EIR should lay out various scenarios for project implementation.
- DEP regulations allow for historic bank restoration (replacement of planting or reconfiguration of the shoreline) where there is an ecological benefit. Otherwise, banks that have been in place for years are assumed to have value as a wetlands resource area.
- BLC and MHC requested more information on how the ACOE's EA will relate to the DEIR in regards to both timing and content (particularly, consistency of project description between the EA and the DEIR). The proponents noted the ACOE process is behind the DEIR process. The ACOE is preparing a Decision Document this year. While originally a joint EIR/EA was anticipated, the EA will follow. However, the proponents and consultants are providing all information developed for the EIR to the ACOE for use in the Decision Document and EA.
- It would be helpful for MHC if the EIR described the decision process in considering each of the potential staging areas.
- MHC requested a copy of draft sections of the EIR that involved archeological interests.
- DEP expressed an interest in working with the proponents and consultants on disposal options for *Phragmites* root mass and sediment in the areas of lead contamination.

All parties indicated that there are no "red flags" but there are some issues that need to be well articulated as noted in the comments.

Muddy River Restoration Project
Pre-Application Review Meeting
March 14, 2001

Name	Organization	Phone / E-mail
John Burckhardt	PB c/o Boston Parks	617-635-4525 jburckhardt@ci.boston.ma.us
ELLEN LIPSEY	BLC/ENV. DEPT.	617/635-2510 ellen.lipsey@ci.boston.ma.us
ELLEN BERKLAND	BLC/ENV. DEPT	617/635-2912 ellen.berkland@ci.boston.ma.us
David Mendelsolun	DEA/DEM	617 626 1316 DAVID.Mendelsolun@state.ma.us
Jim Chulu	Brookline Parks & Open Space	617-730-2088
CRIS MCLOMBS	MEMA	508 820-2067
Edward L. Bell	Mass Hist. Comm.	617-727-8470
Ann M. Lattinville	Mass Historical Com.	617 727 8470
Marion Pressway	Pressway Assoc.	617-491-5300
Bruce Conklin	CDM	617-452-86543
Bob McDonnell	N.H.	617 373-5330
Carl Noyes	Corps	781 890-3737 x128
Greg Penta	Emerald Necklace	978-318-8862
Simone AUSTER	Conservancy	617-732-9823
Steve Lipman	DEP/COMM	(617) 292-5698
Rachel Freed	DEP/Wetlands & Waterway and Point-of-Contact	978/441-7783
Nancy Thornton	DEM WATERWAYS	781-740-1600 (x101)
Frank Beatty	Bos Parks	635-4505
Richard Thibodeau	DEM	617-626-1396
Patrice Kilar	DEM	617 626-1378

DRAFT

EMERALD NECKLACE
ENVIRONMENTAL IMPROVEMENTS MASTER PLAN
AND
PHASE I MUDDY RIVER FLOOD CONTROL, WATER QUALITY,
HABITAT ENHANCEMENT AND HISTORIC PRESERVATION

Meeting with Regulatory Agencies
March 14, 2001

Agenda

1. *Project Update and Schedule*
2. *Presentation: Overview of Proposed Project Elements with discussion of specific project issues*
3. *Outline of Draft Environmental Impact Report (DEIR)*
4. *Questions and Answers*

Muddy River Restoration Project**Schedule**

Fall 2001	Wetland Delineation reviewed by Conservation Commissions
Winter 2001	Complete DEIR; client review
Spring 2001	CAC review of "Pre-Filing" DEIR
Summer 2001	Filing of DEIR Charlesgate Final Design
Fall 2001	Receive Certificate on DEIR Complete Permitting for Charlesgate Advertise, Bid and Award Charlesgate Contract Preparation of FEIR
Fall/Winter 2001/2002	Filing of FEIR
Winter 2002	Begin Charlesgate Construction
Winter/Spring 2002	Receive Certificate on FEIR
Spring/Summer 2002	Complete Charlesgate Construction Muddy River final design
Fall/Winter 2002	Advertise and Bid Muddy River Contract
Winter 2003	Begin Muddy River Construction
Fall 2005	Complete Muddy River Construction

Camp Dresser & McKee Inc.

**Muddy River
Restoration Project**

**Overview of Project
Elements - Pre-application
Review Committee**

March 14, 2001

Bruce Conklin PE, CDM

Marion Pressley, FASLA

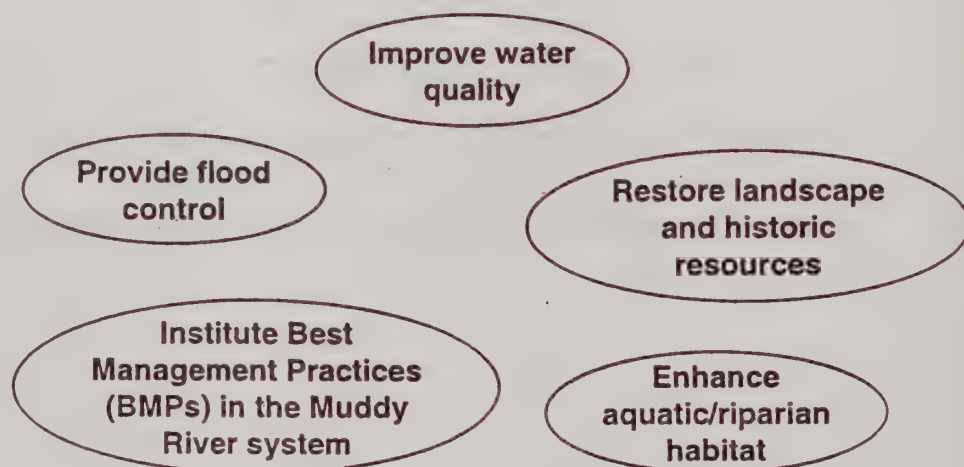
Overview of Project Elements

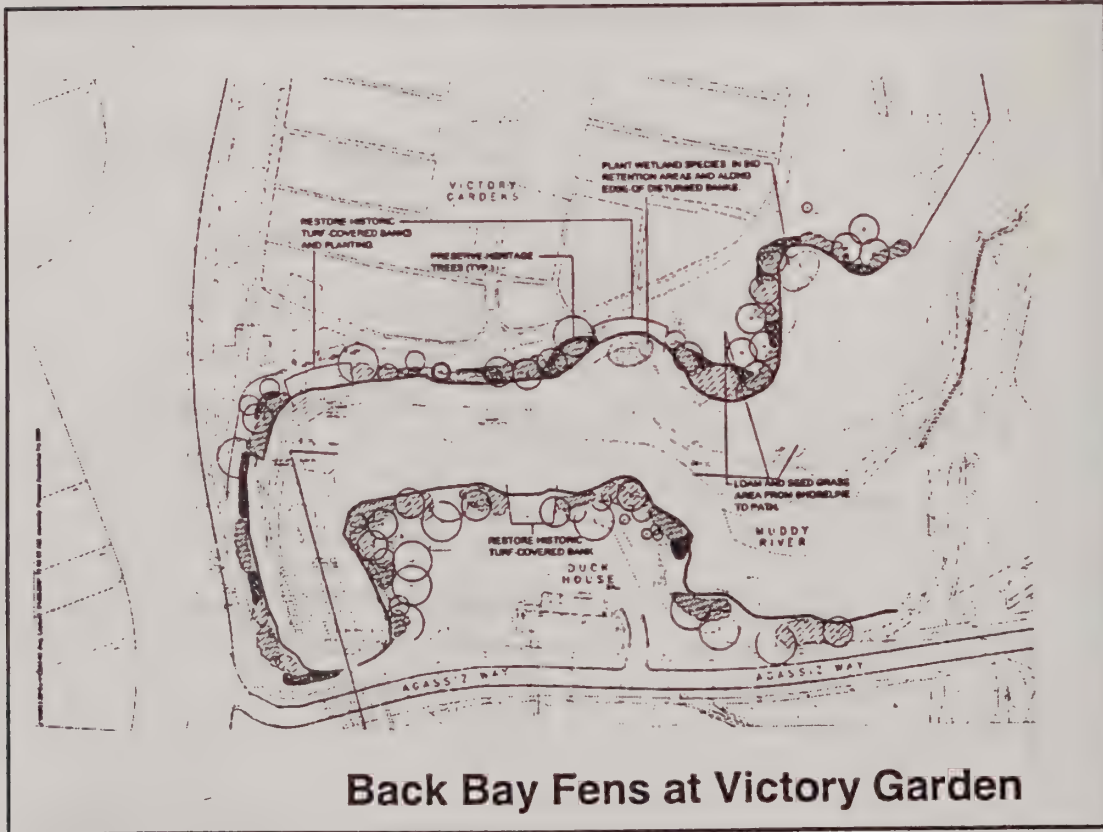
**Emerald Necklace Environmental Master Plan
and Phase 1 Muddy River Flood Control,
Water Quality, Habitat Enhancement and Historic
Preservation**

Objectives of Meeting

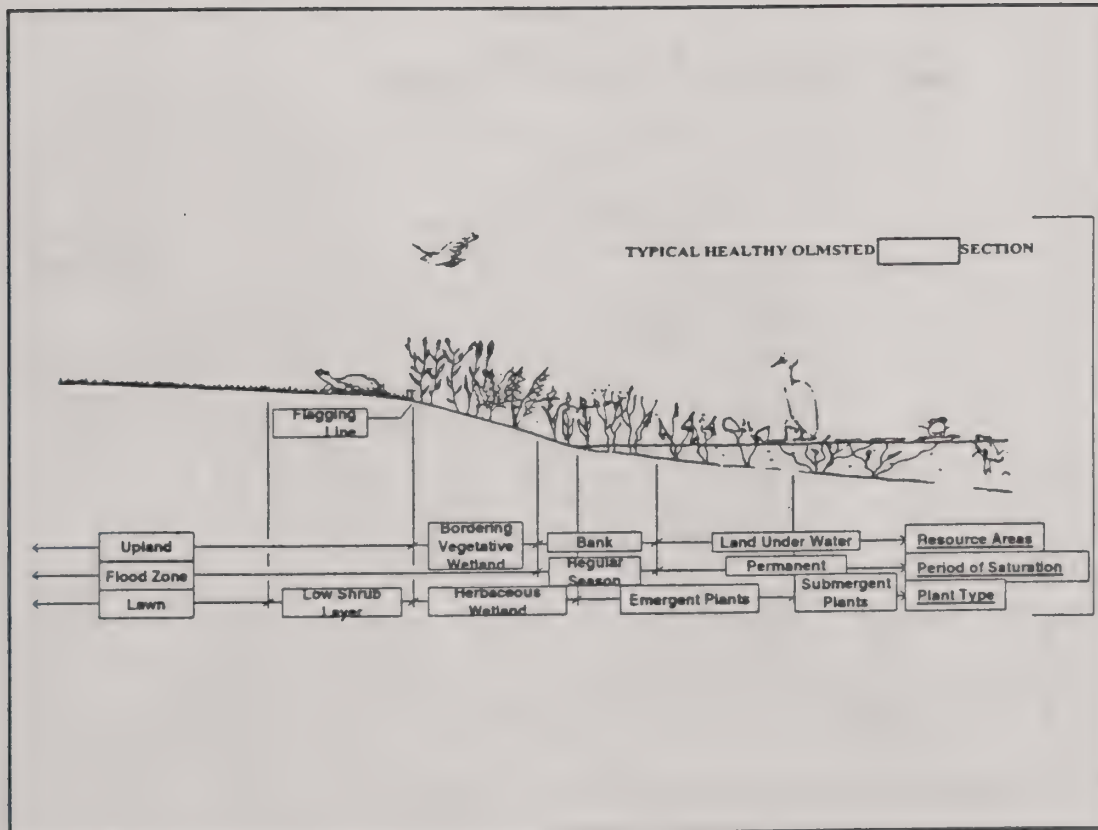
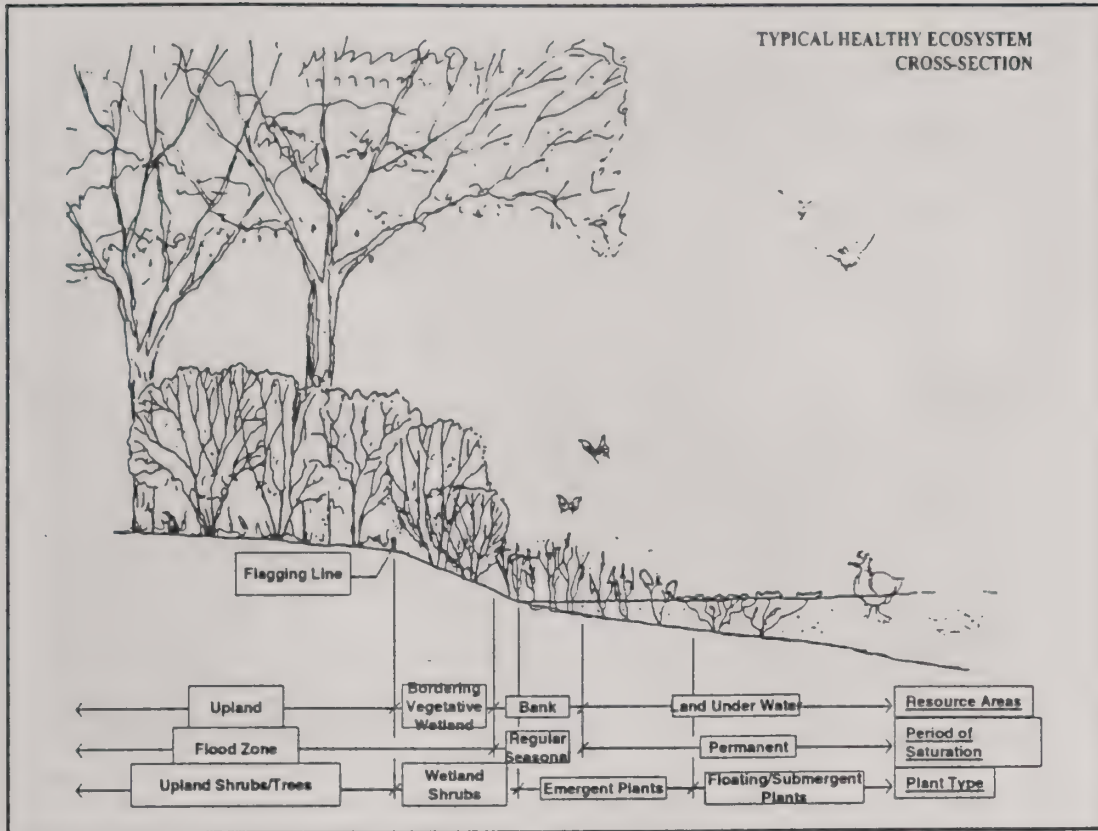
- Review project elements and rationale for selection
- Discuss overlapping regulatory interests
- Identify inter-related project benefits

Project Objectives



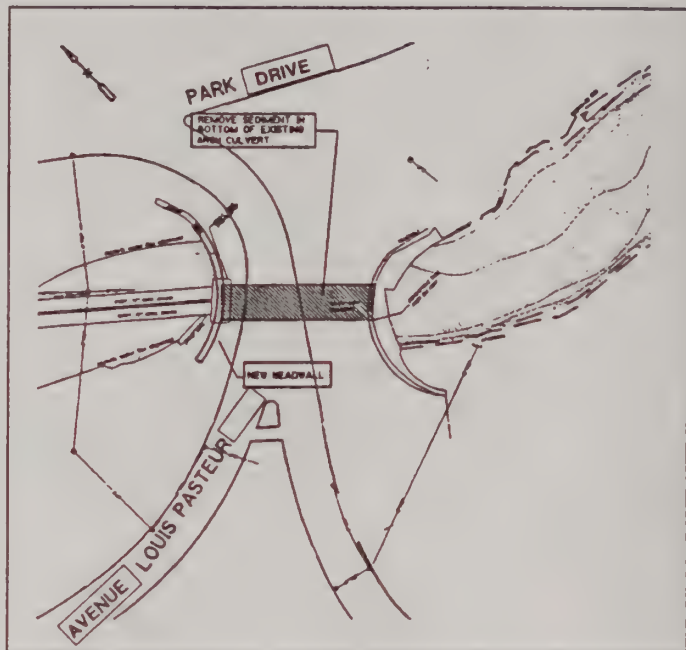


Back Bay Fens at Victory Garden

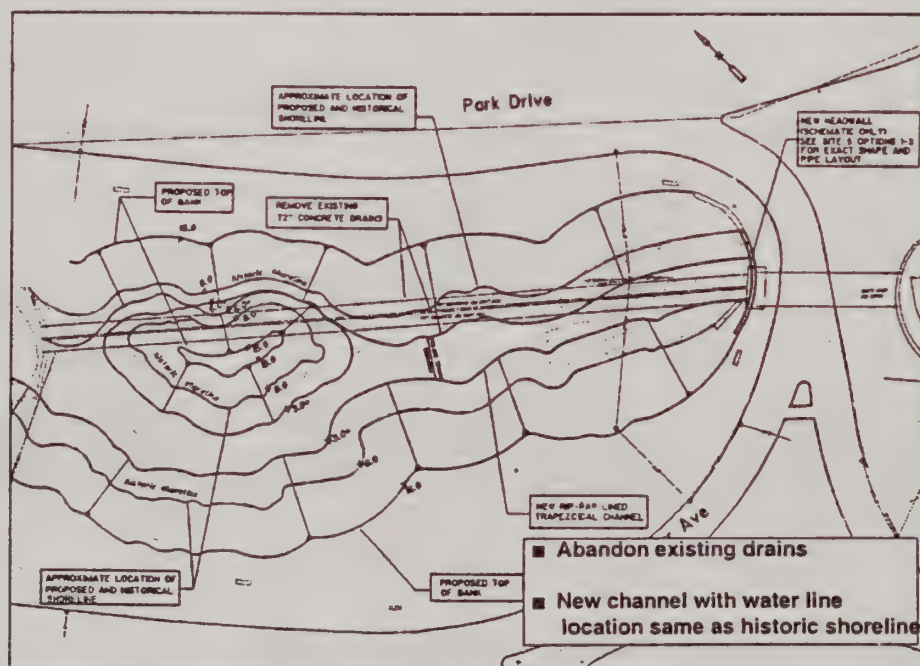


Fens Bridge

- Maintain existing arch culvert
- Dredge bottom of existing culvert
- Restore historic headwall

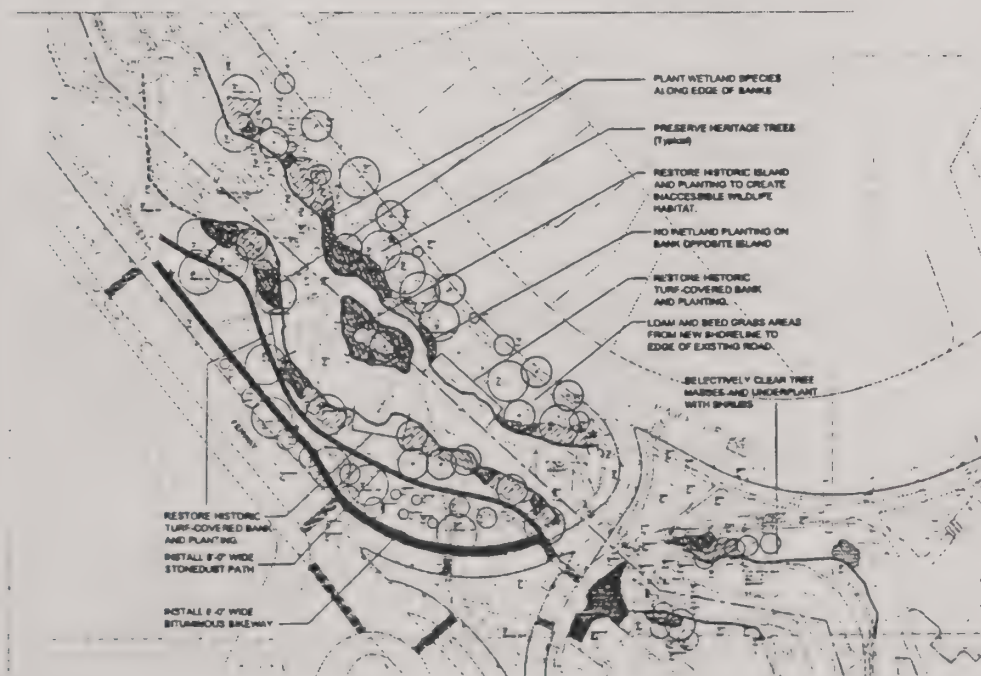


Upstream of Fens Bridge

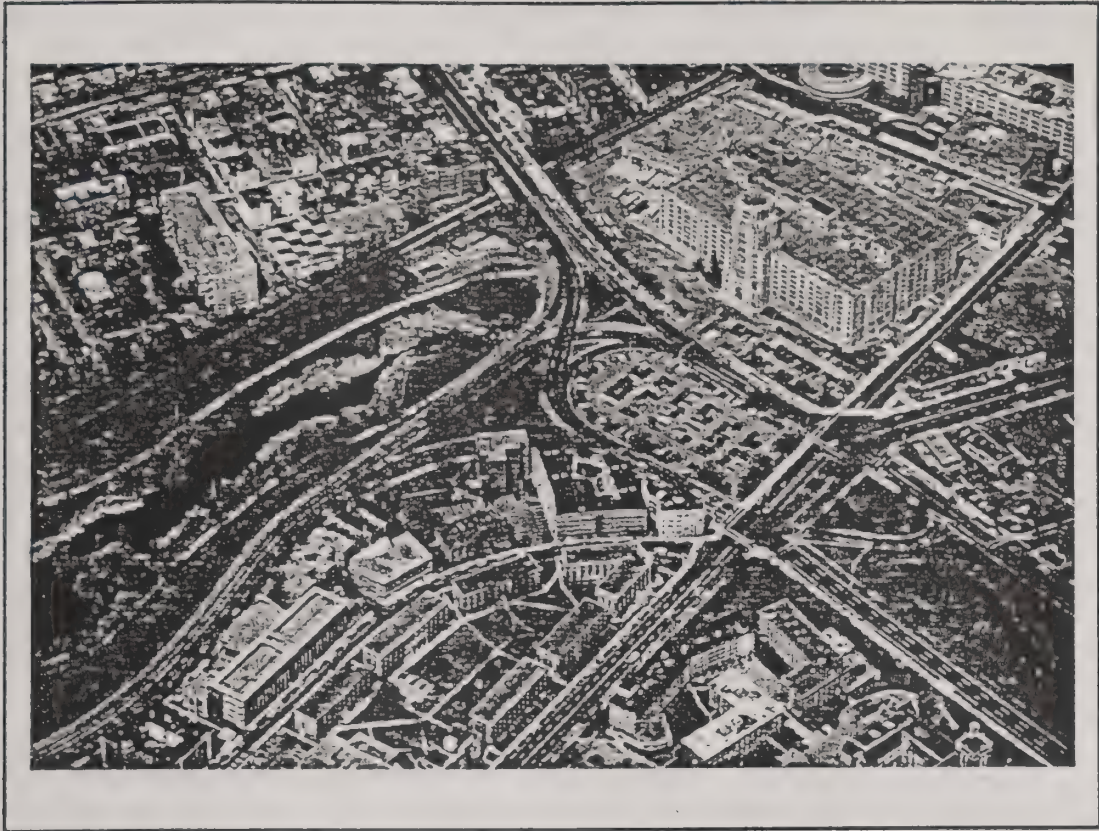




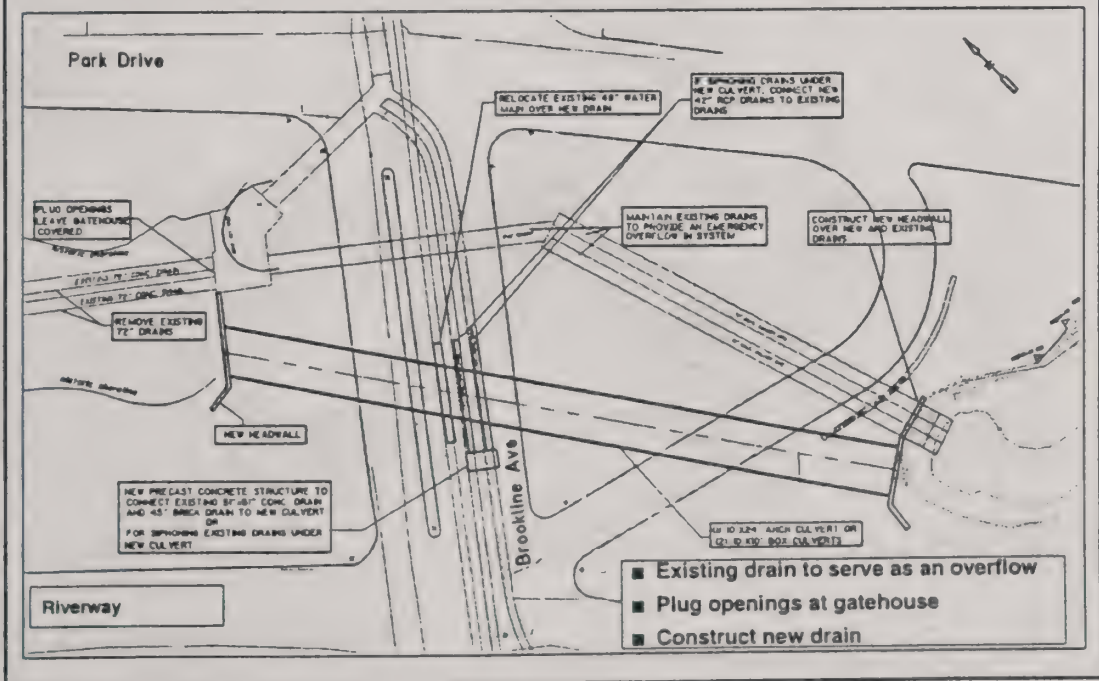
Historic Island at Fens Bridge



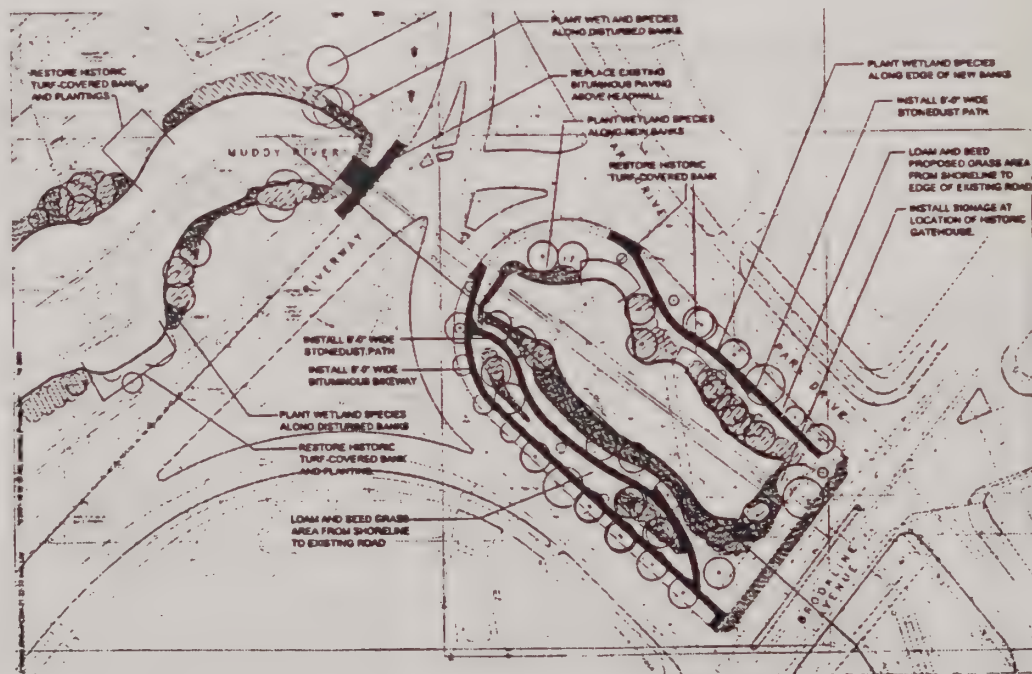
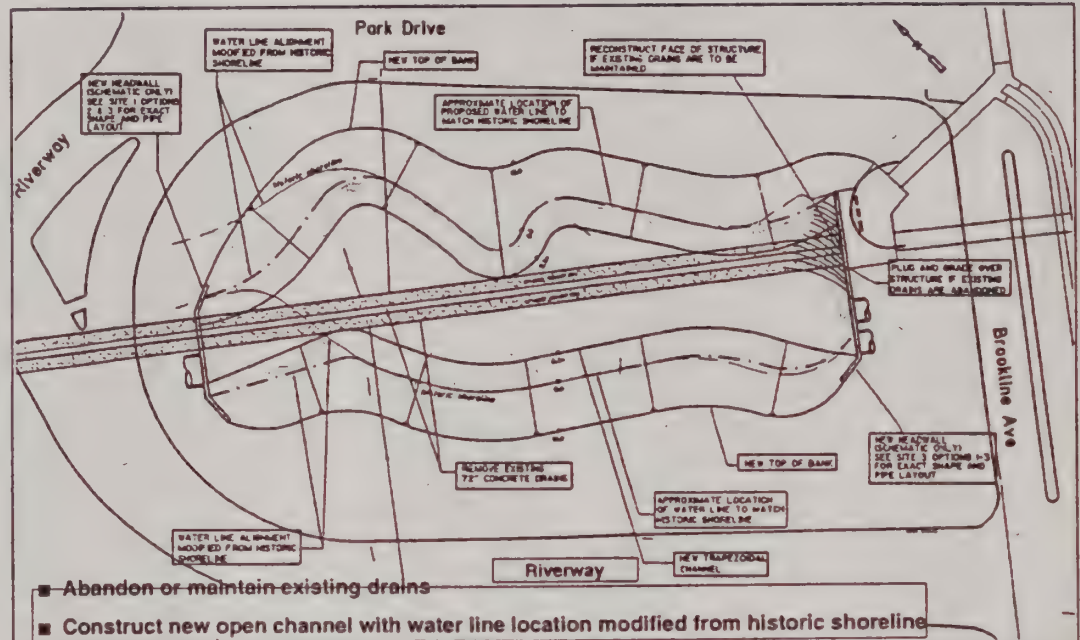
Upstream of Fens Bridge



Brookline Avenue



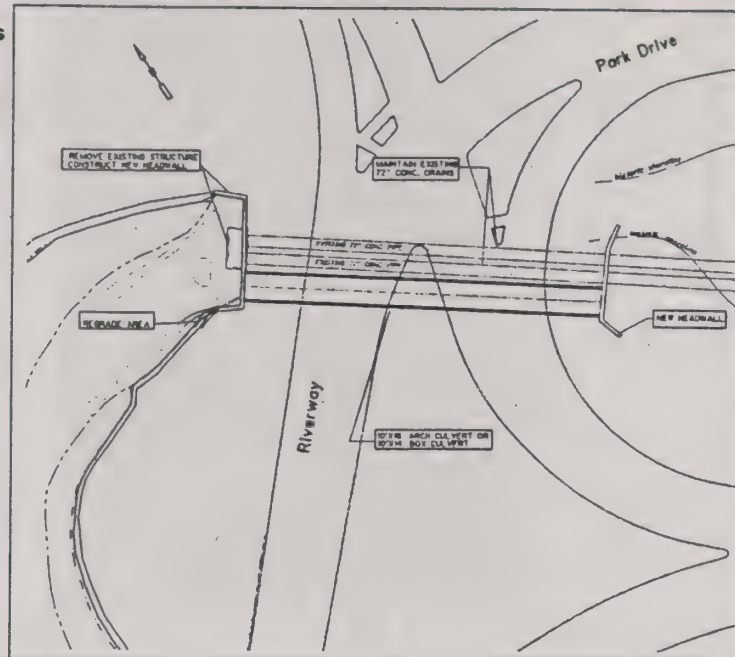
Former Sears Lot



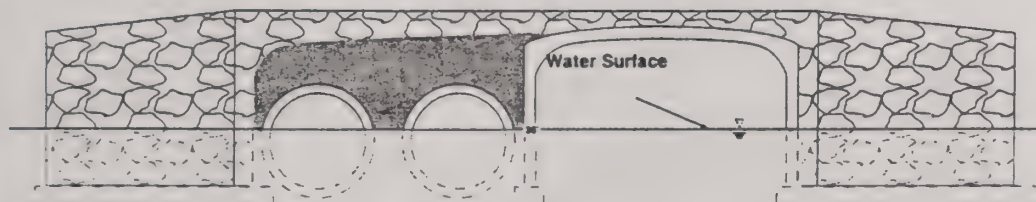
Former Sears Lot

Riverway Culvert

- Maintain existing drains
- Remove structure
- Construct new drain

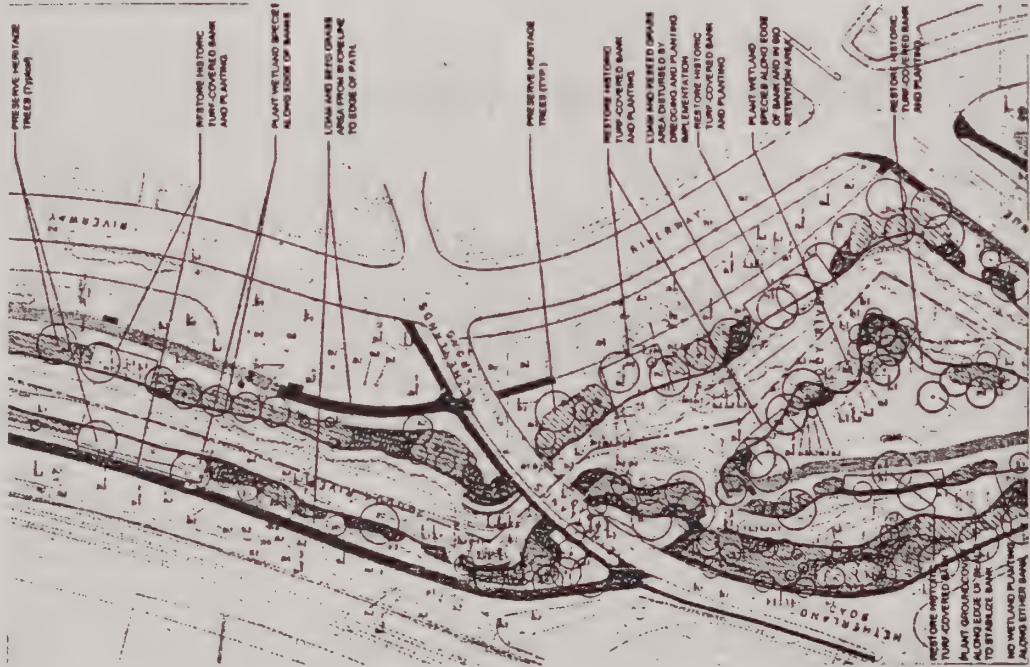


Headwall – Single Opening

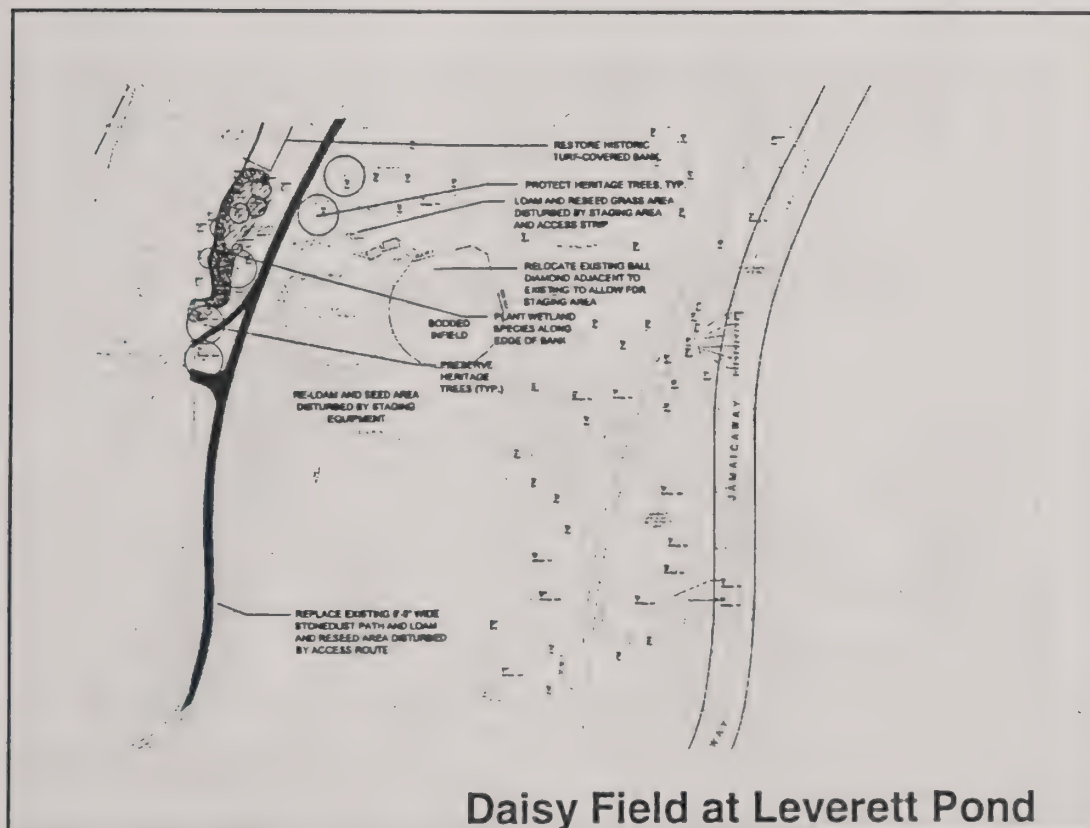


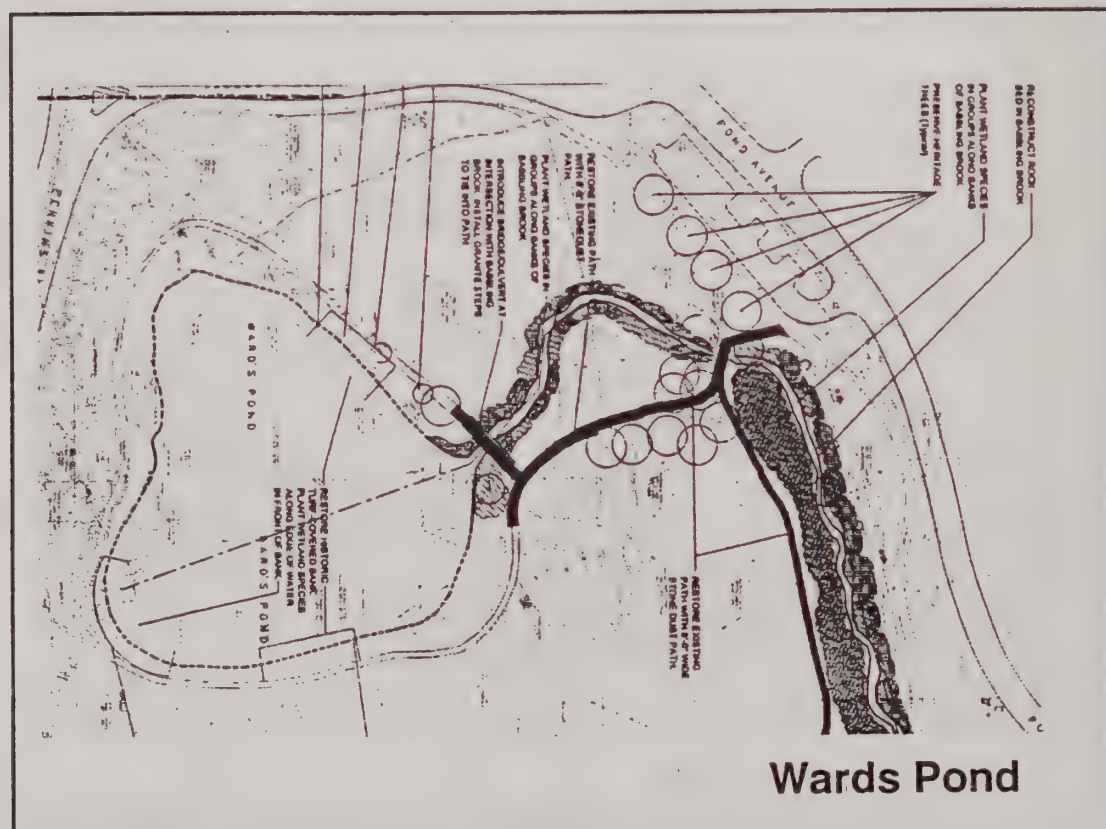
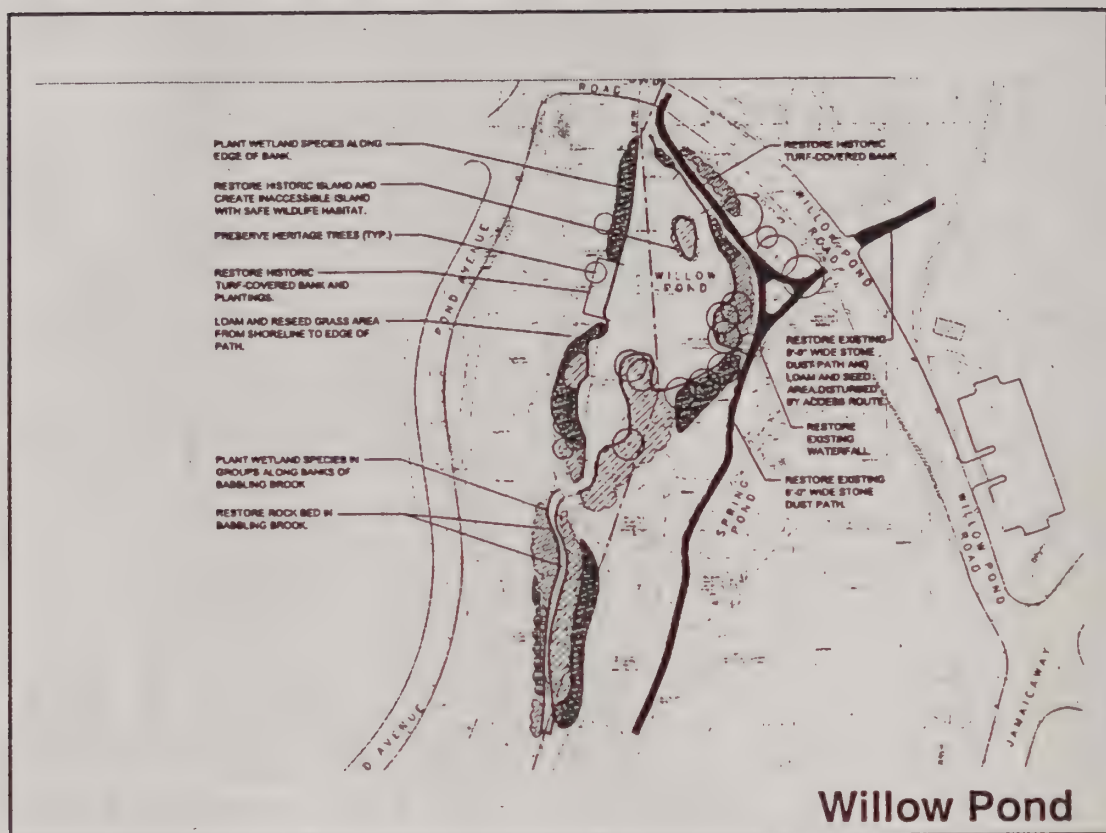


Netherlands Road



Netherlands Road





Best Management Practices – Basin wide Source Controls

- Water quality sampling of loading
- Upgraded street sweeping
- Improved sanding practices
- Improved catch basin cleaning programs
- Trail maintenance
- Public education program
- Waterfowl program
- Bylaws and enforcement

Best Management Practices – Basin wide Treatment Controls

- Pilot program for particle separators

Best Management Practices – Area Controls

- **Back Bay Fens**
 - Vegetated swale
 - Correct MDC curb settings
 - Particle separators
 - Sedimentation basins
- **Riverway**
 - Correct MDC curb settings

Best Management Practices – Area Controls

- **Riverway (con't)**
 - Sedimentation basins
- **Leverett Pond**
 - Particle separators
 - Sedimentation basins
- **Willow Pond**
 - Particle separators
 - Sedimentation basins

Questions and Answers

TABLE 5-1 PROJECT OBJECTIVES MET BY
CHARLESGATE AREA PROJECT ELEMENTS

	PROVIDE FLOOD CONTROL	IMPROVE WATER QUALITY	ENHANCE AQUATIC & RIPARIAN HABITAT	RESTORE LANDSCAPE & HISTORIC RESOURCES	INSTITUTE BEST MANAGEMENT PRACTICES
Remove waterway obstructions	Restores flow capacity of river	None	None	None	None
Dredge approximately 3,300 CY sediment	Restores flow capacity of river	Removing sediments will slightly improve water quality in segment of river	Removed sediments will improve bottom habitat and slightly improve water quality	None	None
Restore & revegetate staging area & disturbed areas	None	Reduces erosion from unvegetated areas	Reduces erosion from unvegetated areas	Restores degraded landscaping, no historic resources affected	Reduces erosion from unvegetated areas
Replace pathways, benches & lighting	None	None	None	Restores degraded landscaping, no historic resources affected	None

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TABLE 5-2 PROJECT OBJECTIVES MET BY
BACK BAY FENS AREA PROJECT ELEMENTS

	PROVIDE FLOOD CONTROL	IMPROVE WATER QUALITY	ENHANCE AQUATIC & RIPARIAN HABITAT	RESTORE LANDSCAPE & HISTORIC RESOURCES	INSTITUTE BEST MANAGEMENT PRACTICES
Dredge approximately 96,500 CY of sediment	Restores flow capacity of river	Removing sediments will improve water quality in river segment	Removing sediments will improve bottom habitat and improve water quality	Restores historic capacity and shape of river channel	None
Remove approximately 23,500 CY of Phragmites and restore bank	Prevents future encroachment into floodway that would reduce flood capacity	None	Results in more diverse aquatic and riparian habitat	Removes invasive plant material from historic landscape	None
Daylight culverted river segments at former Sears parking lot and at the Fens Bridge	Increases flow capacity of infrastructure to pass design storm with lower flood levels	None	Adds new areas of wetland and riparian habitat to river	Restores historic elements of river sections and restores landscape treatment	None
Add new 10 x 16 food arch culvert to existing 72 in dia. culverts at The Riverway	Increases flow capacity of infrastructure to pass design storm with lower flood levels	None	None	None	None
Construct new 10 x 24 foot arch culvert under Brookline Avenue	Increases flow capacity of infrastructure to pass design storm with lower flood levels	None	None	None	None
Dredge Fens Bridge culvert and restore headwalls	Increases flow capacity of infrastructure to pass design storm with lower flood levels	None	None	Restores upstream headwall covered in previous filling, restores downstream headwall	None
Re-vegetate disturbed bank areas and establish wetland areas	None	Reduces erosion from unvegetated areas	Results in more diverse aquatic and riparian habitat	Restores landscape treatment from Olmsted plant list	Reduces erosion from unvegetated areas
Re-vegetate disturbed construction areas including staging areas	None	Reduces erosion from unvegetated areas	Results in more diverse aquatic and riparian habitat	Restores landscape treatment from Olmsted plant list	Reduces erosion from unvegetated areas
Repair / replace pathways and re-vegetate desire lines and unplanted areas	None	Reduces erosion from unvegetated areas	Results in more diverse aquatic and riparian habitat	Restores landscape treatment from Olmsted plant list	Reduces erosion from unvegetated areas

**TABLE 5-3 PROJECT OBJECTIVES MET BY
RIVERWAY AREA PROJECT ELEMENTS**

	PROVIDE FLOOD CONTROL	IMPROVE WATER QUALITY	ENHANCE AQUATIC & RIPARIAN HABITAT	RESTORE LANDSCAPE & HISTORIC RESOURCES	INSTITUTE BEST MANAGEMENT PRACTICES
Dredge approximately 20,200 CY of sediment	None	Removing sediments will improve water quality in river segment	Removing sediments will improve bottom habitat and improve water quality	Restores historic capacity and shape of river channel	None
Remove approximately 10,000 CY of invasive species and restore bank	Prevents future encroachment into floodway that would reduce flood	None	Results in more diverse aquatic and riparian habitat	Removes invasive plant material from historic landscape	None
Re-vegetate disturbed bank areas and establish wetland areas	None	Reduces erosion from unvegetated areas	Results in more diverse aquatic and riparian habitat	Restores landscape treatment from Olmsted plant list	Reduces erosion from unvegetated areas
Re-vegetate disturbed construction areas including staging areas	None	Reduces erosion from unvegetated areas	Results in more diverse aquatic and riparian habitat	Restores landscape treatment from Olmsted plant list	Reduces erosion from unvegetated areas
Repair / replace pathways and re-vegetate desire lines and unplanted areas	None	Reduces erosion from unvegetated areas	Results in more diverse aquatic and riparian habitat	Restores landscape treatment from Olmsted plant list	Reduces erosion from unvegetated areas

TABLE 5-4 PROJECT OBJECTIVES MET BY
LEVERETT POND PROJECT ELEMENTS

	PROVIDE FLOOD CONTROL	IMPROVE WATER QUALITY	ENHANCE AQUATIC & RIPARIAN HABITAT	RESTORE LANDSCAPE & HISTORIC RESOURCES	INSTITUTE BEST MANAGEMENT PRACTICES
Dredge approximately 23,900 CY of sediment	None	Removing sediments will improve water quality in pond	Removing sediments will improve bottom habitat and improve water quality	Restores historic capacity and shape of pond	None
Re-vegetate disturbed bank areas and establish wetland areas	None	Reduces erosion from unvegetated areas	Results in more diverse aquatic and riparian habitat	Restores landscape treatment from Olmsted plant list	Reduces erosion from unvegetated areas
Restore view corridor by reorienting Daisy Field softball field	None	Reduces erosion from unvegetated ballfield areas	None	Partially restores historic view feature of Olmsted Park	Reduces erosion from unvegetated ballfield areas
Restore historic island	None	Reduces erosion from unvegetated areas	Results in more diverse aquatic and riparian habitat	Restores historic feature of Olmsted Park	Reduces erosion from unvegetated areas
Re-vegetate Babbling Brook up to Willow Pond	None	None	Results in more diverse aquatic and riparian habitat	Restores historic feature of Olmsted Park	None
Re-vegetate disturbed construction areas including staging areas	None	Reduces erosion from unvegetated areas	Results in more diverse aquatic and riparian habitat	Restores landscape treatment from Olmsted plant list	Reduces erosion from unvegetated areas
Repair / replace pathways and re-vegetate desire lines and unplanted areas	None	Reduces erosion from unvegetated areas	Results in more diverse aquatic and riparian habitat	Restores landscape treatment from Olmsted plant list	Reduces erosion from unvegetated areas

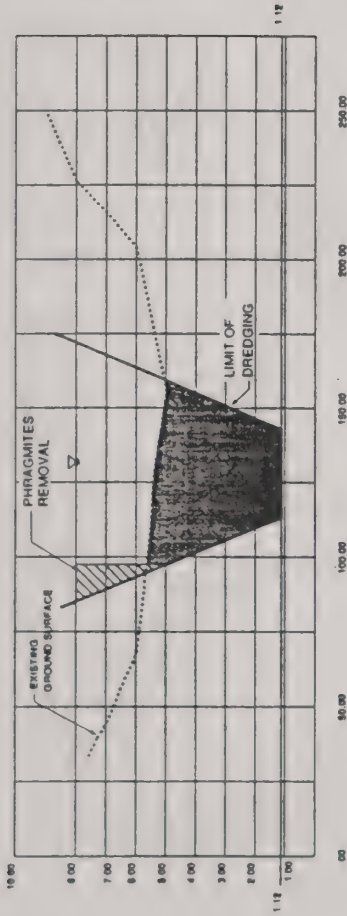
**TABLE 5-5 PROJECT OBJECTIVES MET BY
WILLOW POND PROJECT ELEMENTS**

	PROVIDE FLOOD CONTROL	IMPROVE WATER QUALITY	ENHANCE AQUATIC & RIPARIAN HABITAT	RESTORE LANDSCAPE & HISTORIC RESOURCES	INSTITUTE BEST MANAGEMENT PRACTICES
Dredge approximately 5,900 CY of sediment	None	Removing sediments will improve water quality in pond	Removing sediments will improve bottom habitat and improve water quality	Restores historic capacity and shape of pond	None
Re-vegetate disturbed bank areas and establish wetland areas	None	Reduces erosion from unvegetated areas	Results in more diverse aquatic and riparian habitat	Restores landscape treatment from Olmsted plant list	Reduces erosion from unvegetated areas
Restore historic island	None	None	Results in more diverse aquatic and riparian habitat	Restores historic feature of Olmsted Park	None
Enhancement of three spine stickleback habitat and rock dam outlet of Spring Pond		Slightly improves water quality in Babbling Brook tributary	Results in improved aquatic habitat for three spine stickleback	Restores one of the history pool areas in Olmsted Park	None
Repair / replace pathways and re-vegetate desire lines and unplanted areas	None	Reduces erosion from unvegetated areas	Results in more diverse aquatic and riparian habitat	Restores landscape treatment from Olmsted plant list	Reduces erosion from unvegetated areas

TABLE 5-6 PROJECT OBJECTIVES MET BY
WARDS POND PROJECT ELEMENTS

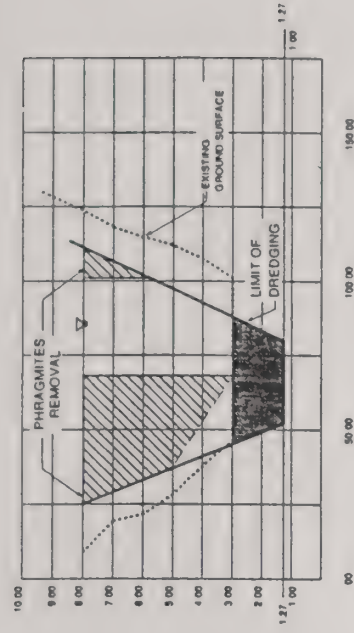
	PROVIDE FLOOD CONTROL	IMPROVE WATER QUALITY	ENHANCE AQUATIC & RIPARIAN HABITAT	RESTORE LANDSCAPE & HISTORIC RESOURCES	INSTITUTE BEST MANAGEMENT PRACTICES
Dredge approximately 15,600 CY of sediment	None	Removing sediments will improve water quality in pond	Removing sediments will improve bottom habitat and improve water quality	Restores historic capacity and shape of pond	None
Re-vegetate disturbed bank areas and establish wetland areas	None	Reduces erosion from unvegetated areas	Results in more diverse aquatic and riparian habitat	Restores landscape treatment from Olmsted plant list	Reduces erosion from unvegetated areas
Preservation of historic shoreline	None	None	Preserves healthy diverse habitat at shoreline	Preserves historic shoreline of pond	None
Repair / replace pathways and re-vegetate desire lines and unplanted areas	None	Reduces erosion from unvegetated areas	Results in more diverse aquatic and riparian habitat	Restores landscape treatment from Olmsted plant list	Reduces erosion from unvegetated areas

BCB



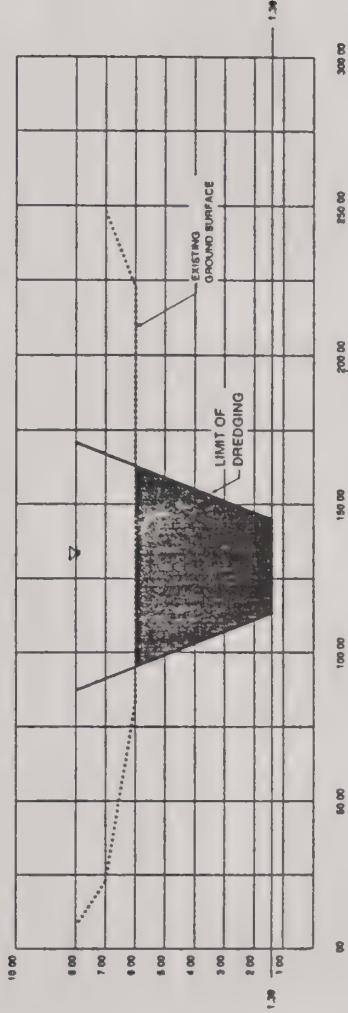
CHANNEL CROSS SECTION
AT STATION 21+00

BCB



CHANNEL CROSS SECTION
AT STATION 31+00

BCB

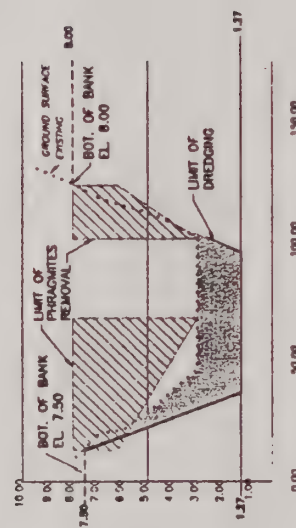


CHANNEL CROSS SECTION
AT STATION 39+00

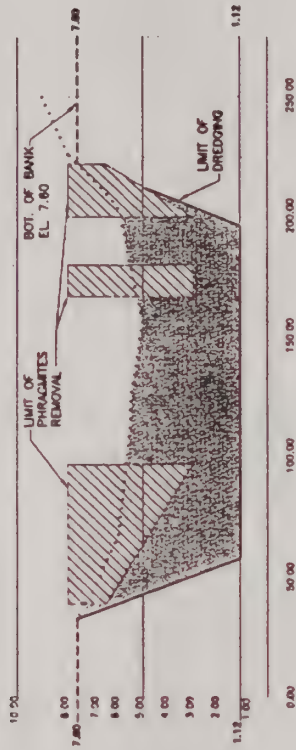
Boston City Base Datum (BCB)

CDM Camp Dresser & McKee Inc.

Figure 2-6
Cross Sections of Back Bay Fens Channel



DREDGE CROSS SECTION
AT STATION 31+00



DREDGE CROSS SECTION
AT STATION 21+00



DREDGE CROSS SECTION
AT STATION 39+00

- BOSTON CITY BASE DATUM (BCB)
- LOCATION OF CROSS-SECTIONS SHOWN ON FIGURE NO. 5-3

Figure No. 5-5
Cross Sections of Back Bay Fens

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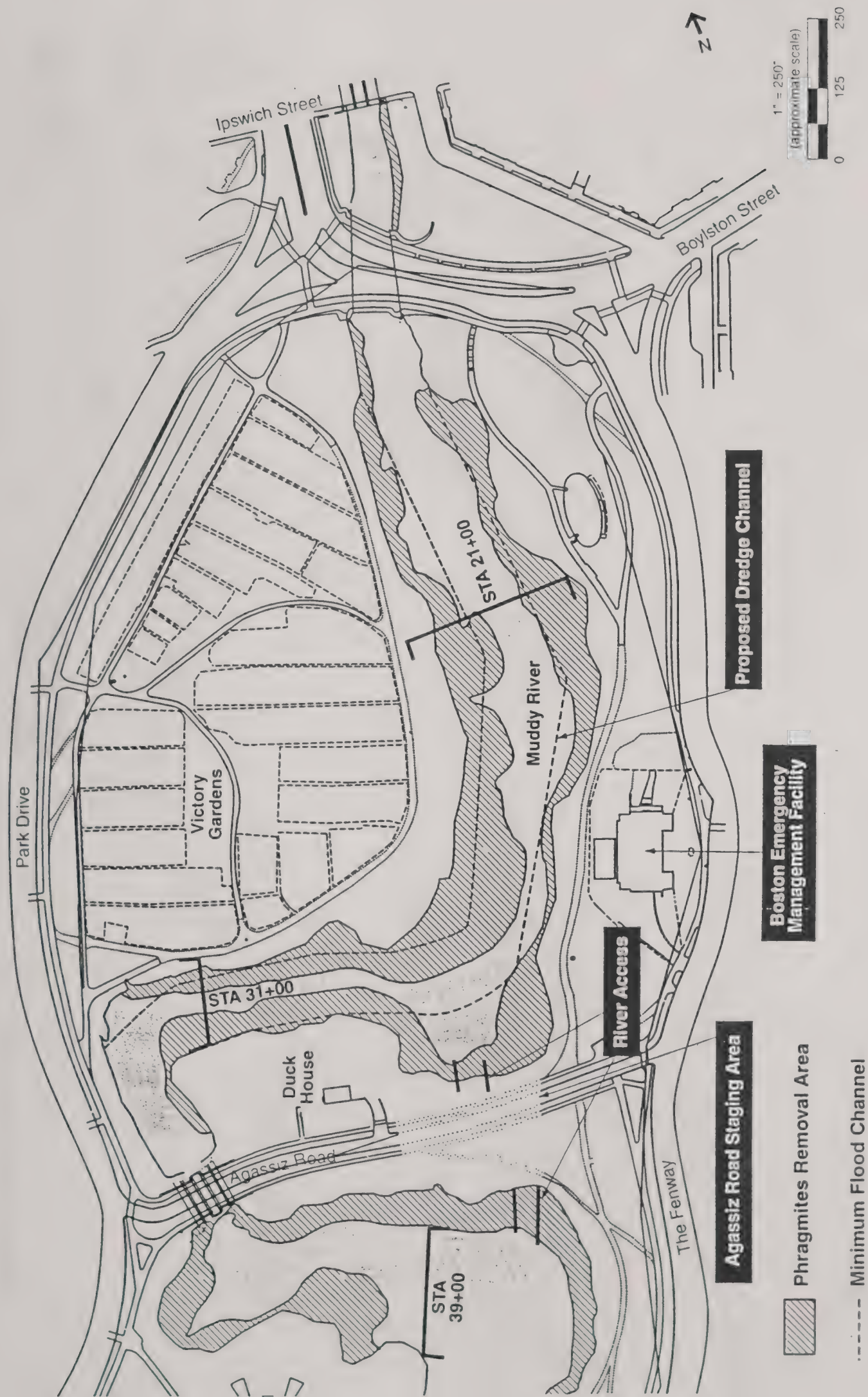
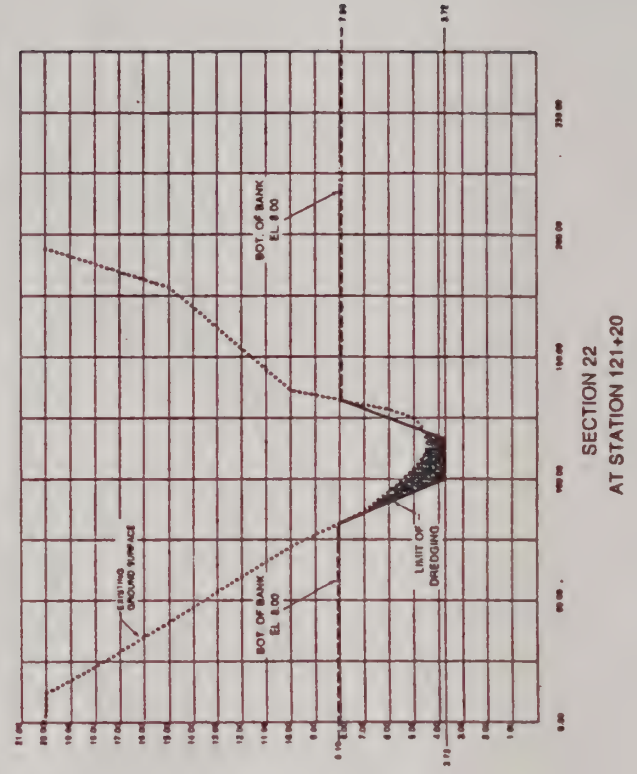
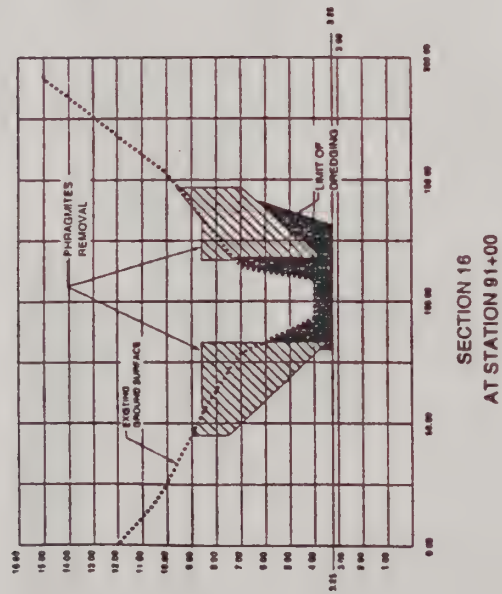
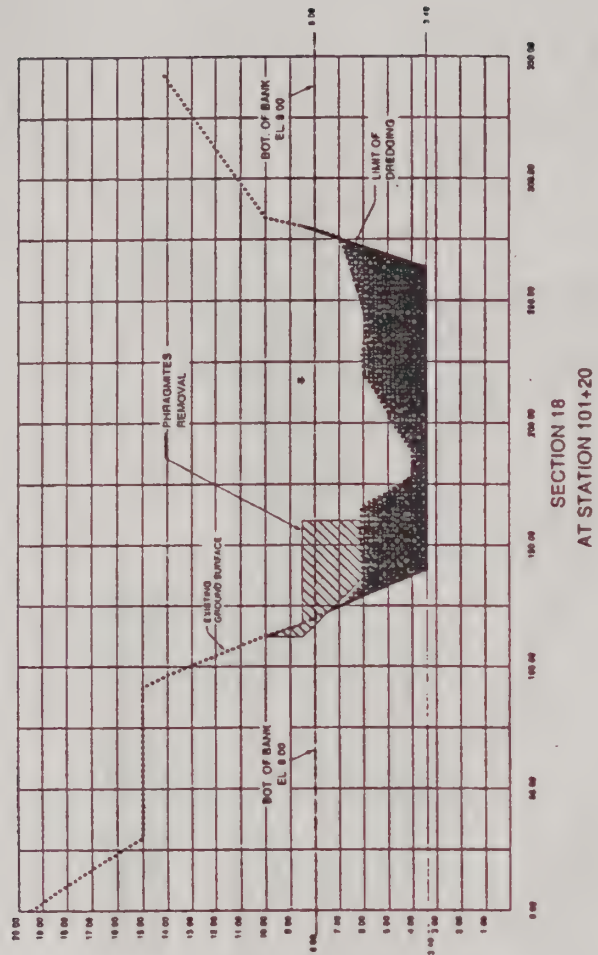


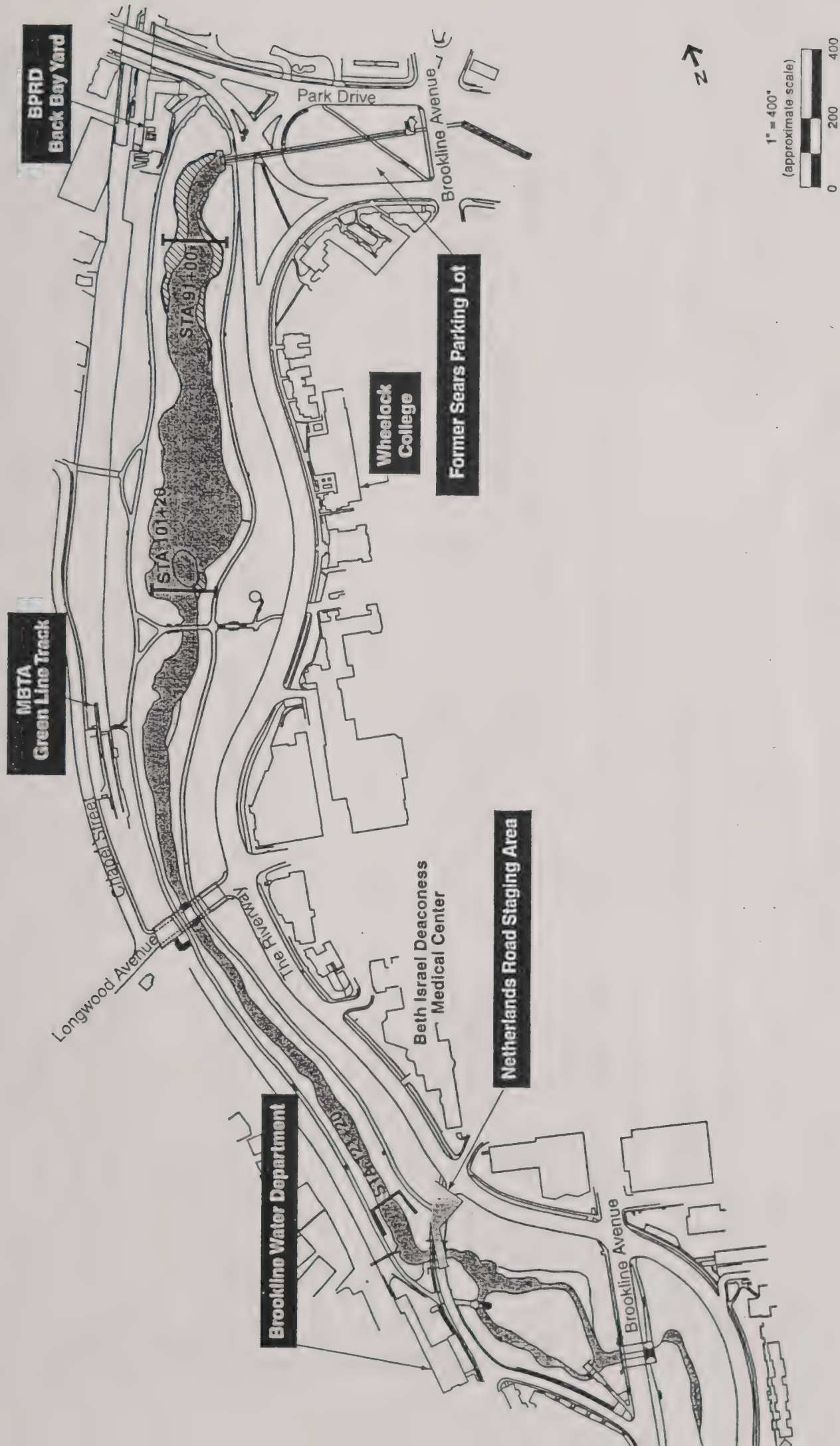
Figure 5-3
Lower Fens Northern Basin and Cross Section Locations



Boston City Base Datum (BCB)

Location of Cross Sections Shown on Figure 5-16

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 Phragmites Removal Area

CDM Camp Dresser & McKee Inc.

Figure 5-16
Phragmites Removal Area in Riverway North

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Back Bay Fens Victory Garden - PRESENT

Wetland Function-Value Evaluation Form

Total area of wetland _____ Human made? _____ Is wetland part of a wildlife corridor? _____ or a "habitat island"? _____
Adjacent land use Park _____ Distance to nearest roadway or other development _____
Dominant wetland systems emergent Contiguous underdeveloped buffer zone present NI _____
Is the wetland a separate hydraulic system? No _____ If not, where does the wetland lie in the drainage basin? _____
How many tributaries contribute to the wetland? 1 _____ Wildlife & vegetation diversity/abundance (see attached list) _____

Wetland I.D. _____
Latitude _____ Longitude _____
Prepared by: JLG Date 10/19/00
Wetland Impact: _____
Type _____ Area _____
Evaluation based on: _____
Office X Field _____
Corps manual wetland delineation completed? Yes X No _____

Function/Value	Occurrence		Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
	Y	N			
 Groundwater Recharge/Discharge		X	7,8		No evidence of groundwater discharge.
 Floodflow Alteration	X		4,5,6,8,10,12,13,18	X	Wetland is able to retain some flood water.
 Fish and Shellfish Habitat	X		4,6,7,12,14,17		Fish are present.
 Sediment/Toxicant Retention	X		1,4,9,10,14,15,16	X	Wetland is effective in trapping sediments from runoff waters.
 Nutrient Removal	X		2,3,4,6,7,8,9,15	X	Wetland is able to trap nutrients from surrounding uplands.
 Production Export		X	2,7		Wetland contains little useable food for living organisms
 Sediment/Shoreline Stabilization	X		3,4,8,9,12,13		Phragmites are effective in stabilizing the bank.
 Wildlife Habitat		X	13		Mono-ecosystem, does not provide a diversity for wildlife habitat.
 Recreation	X		1,4,10,11,12		Area is used for passive recreation.
 Educational Scientific Value		X	12		Area is not used for educational value
 Uniqueness/Heritage		X			
 Visual Quality/Aesthetics		X			
 Endangered Species Habitat		X			No endangered species reported in the area
Other					

*Refer to back up list of numbered considerations.

Notes: *=Restoration goals are designed to provide and enhance these functions and values

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The 13 functions and values that are considered by the Regulatory Division for any Section 404 wetland permit are listed below. The list includes eight functions and five values. Values are grouped together at the end of the list.

These are not necessarily the only wetland functions and values possible. Not are they so precisely defined as to be unalterable. However, they do represent the best working 'palette' of descriptors, which can be used to paint an objective representation of the wetland resources associated with a proposed project.

 **Groundwater Recharge/Discharge**--This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area. Recharge should relate to the potential for the wetland to contribute water to an aquifer. Discharge should relate to the potential for the wetland to serve as an area where groundwater can be discharged to the surface.

 **Floodflow Alteration (Storage & Desynchronization)**--This function considers the effectiveness of the wetland in reducing flood damage by attenuation of floodwaters for prolonged periods following precipitation events.

 **Fish and Shellfish Habitat**--This function considers the effectiveness of seasonal or permanent waterbodies associated with the wetland in question for fish and shellfish habitat.

 **Sediment/Toxicant/Pathogen Retention**--This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants or pathogens.



Nutrient

Removal/Retention/Transformation--This function relates to the effectiveness of the wetland to prevent adverse effects of excess nutrients entering aquifers or surface waters such as ponds, lakes, streams, rivers, or estuaries.



Product Export (Nutrient)--This function relates to the effectiveness of the wetland to produce food or usable products for human, or other living organisms.



Sediment/Shoreline Stabilization--This function relates to the effectiveness of the wetland to stabilize stream banks and shorelines against erosion.



Wildlife Habitat--This function relates to the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered. Species lists of observed and potential animals should be included in the wetland assessment report.

 **Recreation (Consumptive and Non-Consumptive)**--This value considers the effectiveness of the wetland and associated watercourses to provide recreational opportunities such as canoeing, boating, fishing, hunting and other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals, or other resources that are intrinsic to the wetland, whereas non-consumptive opportunities do not.

 **Education/Scientific Value**--This value considers the effectiveness of the wetland as a site for an 'outdoor classroom' or as a location for scientific research or study.

 **Uniqueness/Heritage**--This value considers the effectiveness of the wetland or its associated waterbodies to produce certain special values. Special values may include such things as archeological sites, unusual aesthetic quality, historical events, or unique plants, animals, or geological features.



Visual Quality/Aesthetics--This value relates to the visual and aesthetic qualities of the wetland.



Threatened or Endangered Species Habitat--This value considers the effectiveness of the wetland or its associated waterbodies to support threatened or endangered species.

Source: ACOE

Wetland Function-Value Evaluation Form

Total area of wetland _____ Human made? _____ Is wetland part of a wildlife corridor? _____ or a "habitat island"? _____
Adjacent land use Park _____ Distance to nearest roadway or other development _____
Dominant wetland systems emergent Contiguous underdeveloped buffer zone present NI _____
Is the wetland a separate hydraulic system? No _____ If not, where does the wetland lie in the drainage basin? _____
How many tributaries contribute to the wetland? 1 _____ Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. _____
Latitude _____ Longitude _____
Prepared by: JLG Date 10/19/00
Wetland Impact: _____
Type _____ Area _____
Evaluation based on: _____
Office X Field _____
Corps manual wetland delineation completed? Yes X No _____

	Function/Value	Occurrence		Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
		Y	N			
	Groundwater Recharge/Discharge		X	7,8		No evidence of groundwater discharge.
	Floodflow Alteration	X		4,5,6,8,10,12,13,18	X	Dedging will improve flood retention.
	Fish and Shellfish Habitat	X		4,6,7,12,14,17		Fish are present.
	Sediment/Toxicant Retention	X		1,3,4,9,10,12*,14,15,16	X	Emergent vegetation will be as effective in trapping sediment as <i>Phragmites</i> .
	Nutrient Removal	X		2,3,4,5,6,7,8,9,12,15	X	Wetland is able to trap nutrients from surrounding uplands.
	Production Export	X		1,2,4*,7,8,12,13		Area will be replanted with high food value wetland plants.
	Sediment/Shoreline Stabilization	X		3,4,8,9,12,13,14,15		Emergent vegetation and shrubs will stabilize banks and prevent erosion.
	Wildlife Habitat	X		8,13,14,15,16*,19,20	X	A diverse mix of wetland vegetation in various vegetated layers will provide high wildlife habitat value.
	Recreation	X		1,4,5*,7,8*,9,10,11,12,21		Area is used for passive recreation.
	Educational Scientific Value	X		3,5,7*,9,10,11		Area is not used for educational purposes
	Uniqueness/Heritage	X		1,2,4,5,7,11,12,13,14,15,17,19		
	Visual Quality/Aesthetics	X		1,2,4,7*,8		
	Endangered Species Habitat		X			No endangered species reported in the area
Other						

*Refer to back up list of numbered considerations.

Notes: * = Restoration goals are designed to provide and enhance these functions and values.

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Wetland Function-Value Evaluation Form

Total area of wetland _____ Human made? _____ Is wetland part of a wildlife corridor? _____ or a "habitat island"?

Adjacent land use Park _____ Distance to nearest roadway or other development _____

Dominant wetland systems Shrub Contiguous underdeveloped buffer zone present NI _____

Is the wetland a separate hydraulic system? No _____ If not, where does the wetland lie in the drainage basin? _____

How many tributaries contribute to the wetland? 1 _____ Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. _____
 Latitude _____ Longitude _____
 Prepared by: JLG Date 10/19/00
 Wetland Impact: _____
 Type _____ Area _____
 Evaluation based on: _____
 Office X Field _____
 Corps manual wetland delineation completed? Yes X No _____

Function/Value	Occurrence	Rationale	Principal	Comments
	Y	N	Function(s)/Value(s)	
Groundwater Recharge/Discharge		X	7	No evidence of groundwater discharge.
Floodflow Alteration	X		4,5,9,12	Wetland is able to retain some flood water.
Fish and Shellfish Habitat	X		3,4,6,8,12,17	Fish are present.
Sediment/Toxicant Retention	X		1,3,4,8,9,10,16	Wetland is effective in trapping sediments from runoff waters.
Nutrient Removal	X		2,3,4,6,7,8,9,12	Wetland is able to trap nutrients from surrounding uplands.
Production Export	X		1,2,8,12	Wetland contains little useable food for living organisms
Sediment/Shoreline Stabilization	X		1,3,5,6,8,9,12,13	Phragmites are effective in stabilizing the bank.
Wildlife Habitat	X		10,14,15,16*,19*,20*	Mono-ecosystem, does not provide a diversity for wildlife habitat.
Recreation	X		4,7,8,9,10,12	Area is used for passive recreation.
Educational Scientific Value		X	3,5*,8,9,10,11,12	Area is not used for educational value
Uniqueness/Heritage		X	1,2,4,5*,8,11,12,15,16,17	
Visual Quality/Aesthetics		X	1,2,4,7*,8	
Endangered Species Habitat		X		No endangered species reported in the area
Other		X		

*Refer to back up list of numbered considerations.

Notes: *=Restoration goals are designed to provide and enhance these functions and values.

Table 9-2

**BACK BAY FENS: COMPARISON OF PROJECT ELEMENTS WITH PROJECT OBJECTIVES
AND REGULATORY INTERESTS/STANDARDS**

	Project Objectives					WPA Interests (C. 131, Sec. 40)										10.53(4) WPA Reqs					Section 106					C.W.A. 404(b)(1)		
	Flood control	Water Quality Improvement	Enhancement of Aquatic Habitat	Enhancement of Wetland Habitat	Enhancement of Wildlife Habitat	Restoration of the Historic Bank	Public/Private Water Supply	Groundwater Supply	Flood Control	Storm Damage Prevention	Prevention of Pollution	Protection of Land Containing Shellfish	Protection of Fishenes	Protection of Wildlife Habitat	Improve Natural Capacity of Bank	Improve Natural Capacity of BW	Improve Natural Capacity of LW	Improve Natural Capacity of Riverfront Area	No Adverse Impact to Rare Species Habitat	No Effect on Historic Resources	No Adverse Effect on Historic Resources	Adverse Effect on Historic Resources	Enhanced Functions and Values	LEDPA	Monitoring			
Back Bay Fens Project Elements																												
Improve flood carrying capacity by dredging approximately 95,450 cubic yards (cy) of sediment and debris for a flood channel	◆	◆	◆	○	○	○	n/a	n/a	◆	◆	◆	n/a	◆	○	○	○	◆	◆	○	○	◆	◆	◆	○	○	○		
Dredge a flood channel and remove approximately 23,494 cy of Phragmites and restore the natural bank	◆	◆	◆	◆	◆	◆	n/a	n/a	◆	◆	◆	n/a	◆	◆	◆	○	◆	◆	○	○	◆	◆	◆	○	○	○		
Daylight presently culverted sections at the Fens Bridge and the former Sears parking lot	◆	○	◆	◆	◆	◆	n/a	n/a	◆	◆	○	n/a	◆	◆	◆	◆	◆	◆	◆	○	◆	◆	◆	◆	○	○		
Preserve the historic park features by revegetating the new bank with wetland, shoreline, upland plants	○	◆	◆	◆	◆	◆	n/a	n/a	○	◆	◆	n/a	◆	◆	◆	◆	◆	◆	◆	○	◆	◆	◆	◆	◆	◆		
Repair or replace worn pathways and denuded ground	○	◆	○	○	○	○	n/a	n/a	○	◆	◆		○	○	○	○	○	◆	○	○	◆	◆	○	○	○	○		
Implement Best Management Practices	○	◆	○	○	○	○	n/a	n/a	○	○	◆	n/a	◆	○	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆		
Combined effect of all the proposed project elements	◆	◆	◆	◆	◆	◆	n/a	n/a	◆	◆	◆	n/a	◆	◆	◆	◆	◆	◆	◆	○	◆	◆	◆	◆	◆	◆		

Legend

- ◆ Meets the project objectives and regulatory interests/standards
- ◆ Partially meets the project objectives and regulatory interests/standards
- Does not meet the project objectives and regulatory interests/standards
- n/a Not applicable

DRAFT

Riverway Area - PRESENT

Wetland Function-Value Evaluation Form

Total area of wetland _____ Human made? _____ Is wetland part of a wildlife corridor? _____ or a "habitat island"?

Adjacent land use _____ Park _____ Distance to nearest roadway or other development _____

Dominant wetland systems _____ Shrub Contiguous underdeveloped buffer zone present _____ NI _____

Is the wetland a separate hydraulic system? _____ No _____ If not, where does the wetland lie in the drainage basin? _____

How many tributaries contribute to the wetland? _____ I _____ Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. _____
 Latitude _____ Longitude _____
 Prepared by: _____ JLG Date 10/19/00
 Wetland Impact: _____
 Type _____ Area _____
 Evaluation based on:
 Office _____ X _____ Field _____
 Corps manual wetland delineation
 completed? Yes _____ X _____ No _____

Function/Value	Occurrence		Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
	Y	N			
 Groundwater Recharge/Discharge		X	7		No evidence of groundwater discharge.
 Floodflow Alteration	X		4,5,9,12	X	Wetland is able to retain some flood water.
 Fish and Shellfish Habitat	X		3,4,6,8,12,17		Fish are present.
 Sediment/Toxicant Retention	X		1,3,4,8,9,10,16	X	Wetland is effective in trapping sediments from runoff waters.
 Nutrient Removal	X		2,3,4,6,7,8,9	X	Wetland is able to trap nutrients from surrounding uplands.
 Production Export		X	1,2		Wetland contains little useable food for living organisms
 Sediment/Shoreline Stabilization	X		1,3,5,6,8,9,12		Phragmites are effective in stabilizing the bank.
 Wildlife Habitat		X	9,10		Mono-ecosystem, does not provide a diversity for wildlife habitat.
 Recreation	X		13		Area is used for passive recreation.
 Educational Scientific Value		X			Area is not used for educational value
 Uniqueness/Heritage		X	1,2		
 Visual Quality/Aesthetics		X			
 Endangered Species Habitat		X			No endangered species reported in the area
Other					

*Refer to back up list of numbered considerations.

Notes: * = Restoration goals are designed to provide and enhance these functions and values.

Table 4-14
Wetland Function-Value Evaluation Form for The Riverway

DRAIN

The 13 functions and values that are considered by the Regulatory Division for any Section 404 wetland permit are listed below. The list includes eight functions and five values. Values are grouped together at the end of the list.

These are not necessarily the only wetland functions and values possible. Not are they so precisely defined as to be unalterable. However, they do represent the best working 'palette' of descriptors, which can be used to paint an objective representation of the wetland resources associated with a proposed project.

 **Groundwater Recharge/Discharge**--This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area. Recharge should relate to the potential for the wetland to contribute water to an aquifer. Discharge should relate to the potential for the wetland to serve as an area where groundwater can be discharged to the surface.

 **Floodflow Alteration (Storage & Desynchronization)**--This function considers the effectiveness of the wetland in reducing flood damage by attenuation of floodwaters for prolonged periods following precipitation events.

 **Fish and Shellfish Habitat**--This function considers the effectiveness of seasonal or permanent waterbodies associated with the wetland in question for fish and shellfish habitat.

 **Sediment/Toxicant/Pathogen Retention**--This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants or pathogens.

 **Nutrient Removal/Retention/Transformation**--This function relates to the effectiveness of the wetland to prevent adverse effects of excess nutrients entering aquifers or surface waters such as ponds, lakes, streams, rivers, or estuaries.

 **Product Export (Nutrient)**--This function relates to the effectiveness of the wetland to produce food or usable products for human, or other living organisms.

 **Sediment/Shoreline Stabilization**--This function relates to the effectiveness of the wetland to stabilize stream banks and shorelines against erosion.

 **Wildlife Habitat**--This function relates to the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered. Species lists of observed and potential animals should be included in the wetland assessment report.

 **Recreation (Consumptive and Non-Consumptive)**--This value considers the effectiveness of the wetland and associated watercourses to provide recreational opportunities such as canoeing, boating, fishing, hunting and other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals, or other resources that are intrinsic to the wetland, whereas non-consumptive opportunities do not.

 **Education/Scientific Value**--This value considers the effectiveness of the wetland as a site for an 'outdoor classroom' or as a location for scientific research or study.

 **Uniqueness/Heritage**--This value considers the effectiveness of the wetland or its associated waterbodies to produce certain special values. Special values may include such things as archeological sites, unusual aesthetic quality, historical events, or unique plants, animals, or geological features.

 **Visual Quality/Aesthetics**--This value relates to the visual and aesthetic qualities of the wetland.

 **Threatened or Endangered Species Habitat**--This value considers the effectiveness of the wetland or its associated waterbodies to support threatened or endangered species.

Source: ACOE

9-4

Table 9-3

**RIVERWAY: COMPARISON OF PROJECT ELEMENTS WITH PROJECT OBJECTIVES
AND REGULATORY INTERESTS/STANDARDS**

Riverway Project Elements	Project Objectives					WPA Interests (C. 131, Sec. 40)					10.53(4) WPA Regs					Section 106					C.W.A. 404(b)(1)				
	Flood control	Water Quality Improvement	Enhancement of Aquatic Habitat	Enhancement of Wetland Habitat	Enhancement of Wildlife Habitat	Restoration of the Historic Bank	Public/Private Water Supply	Groundwater Supply	Flood Control	Storm Damage Prevention	Prevention of Pollution	Protection of Land Containing Shellfish	Protection of Fisheries	Protection of Wildlife Habitat	Improve Natural Capacity of Bank	Improve Natural Capacity of BVW	Improve Natural Capacity of LUW	Improve Natural Capacity of Riverfront Area	No Adverse Impact to Rare Species Habitat	No Effect on Historic Resources	No Adverse Effect on Historic Resources	Adverse Effect on Historic Resources	Enhanced Functions and Values	LEDPA	Monitoring
Improve the flood carrying capacity by dredging approximately 21,000 cy of sediment and debris and 9,000 cy of Phragmites for a flood channel	◆	◆	◆	○	○	◆	n/a	n/a	◆	◆	◆	n/a	◆	○	○	○	○	○	○	○	◆	○	○	○	○
Dredge a flood channel and revegetate the new bank by establishing wetland, shoreline and upland plants	◆	◆	◆	◆	◆	◆	n/a	n/a	◆	◆	◆	n/a	◆	◆	◆	◆	◆	◆	◆	○	◆	○	◆	◆	◆
Repair or replace worn pathways and denuded ground	○	◆	○	○	○	○	n/a	n/a	○	○	◆	○	○	○	○	○	○	○	◆	○	◆	○	◆	○	○
Implement Best Management Practices	○	◆	◆	○	○	○	n/a	n/a	○	○	◆	n/a	◆	○	○	○	○	○	○	○	◆	○	◆	◆	◆
Combined effect of all the proposed project elements	◆	◆	◆	◆	◆	◆	n/a	n/a	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	○	◆	○	◆	◆	◆

Legend

- ◆ Meets the project objectives and regulatory interests/standards
- ◆ Partially meets the project objectives and regulatory interests/standards
- Does not meet the project objectives and regulatory interests/standards
- n/a Not applicable

9-3

Table 9-1

**LEVERETT POND: COMPARISON OF PROJECT ELEMENTS WITH PROJECT OBJECTIVES
AND REGULATORY INTERESTS/STANDARDS**

Project Objectives	WPA Interests (C. 131, Sec. 40)										10.53(4) WPA Reqs				Section 106				C.W.A. 404(b)(1)						
	Flood control	Water Quality Improvement	Enhancement of Aquatic Habitat	Enhancement of Wetland Habitat	Enhancement of Wildlife Habitat	Restoration of the Historic Bank	Public/Private Water Supply	Groundwater Supply	Flood Control	Storm Damage Prevention	Prevention of Pollution	Protection of Land Containing Shellfish	Protection of Fisheries	Protection of Wildlife Habitat	Improve Natural Capacity of Bank	Improve Natural Capacity of BW	Improve Natural Capacity of LUW	Improve Natural Capacity of Riverfront Area	No Adverse Impact to Rare Species Habitat	No Effect on Historic Resources	No Adverse Effect on Historic Resources	Adverse Effect on Historic Resources	Enhanced Functions and Values	LEDPA	Monitoring
Leverett Pond Project Elements																									
Improve the flood carrying capacity by dredging approximately 23,000 cubic yards (cy) of sediment.	♦	♦	♦	♦	♦	♦	n/a	n/a	♦	♦	♦	n/a	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦
Preserve the historic shoreline through the reorientation of the Daisy Field backstop/playing field.	♦	♦	♦	♦	♦	♦	n/a	n/a	♦	♦	♦	n/a	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦
Preserve the historic park features through the revegetation of the new bank, an island, the establishment of wetland, shoreline and upland plants	♦	♦	♦	♦	♦	♦	n/a	n/a	♦	♦	♦	n/a	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦
Restore of the "babbling brook" at the inlet to Leverett Pond from Willow Pond	♦	♦	♦	♦	♦	♦	n/a	n/a	♦	♦	♦	n/a	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦
Repair or replace worn pathways and denuded ground	♦	♦	♦	♦	♦	♦	n/a	n/a	♦	♦	♦	n/a	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦
Implement Best Management Practices	♦	♦	♦	♦	♦	♦	n/a	n/a	♦	♦	♦	n/a	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦
Combined effect of all the proposed project elements	♦	♦	♦	♦	♦	♦	n/a	n/a	♦	♦	♦	n/a	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦

Legend

- ♦ Meets the project objectives and regulatory interests/standards
- ♦ Partially meets the project objectives and regulatory interests/standards
- ♦ Does not meet the project objectives and regulatory interests/standards
- n/a Not applicable

EXECUTIVE ORDER 12898

FEDERAL ACTIONS TO ADDRESS ENVIRONMENTAL JUSTICE IN MINORITY POPULATIONS AND LOW-INCOME POPULATIONS

By the authority vested in me as President by the Constitution and the laws of the United States of America, it is hereby ordered as follows:

Section 1-1. Implementation.

1-101. Agency Responsibilities. To the greatest extent practicable and permitted by law, and consistent with the principles set forth in the report on the National Performance Review, each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States and its territories and possessions, the District of Columbia, the Commonwealth of Puerto Rico, and the Commonwealth of the Mariana Islands.

1-102. Creation of an Interagency Working Group on Environmental Justice. (a) Within 3 months of the date of this order, the Administrator of the Environmental Protection Agency ("Administrator") or the Administrator's designee shall convene an interagency Federal Working Group on Environmental Justice ("Working Group"). The Working Group shall comprise the heads of the following executive agencies and offices, or their designees: (a) Department of Defense; (b) Department of Health and Human Services; (c) Department of Housing and Urban Development; (d) Department of Labor; (e) Department of Agriculture; (f) Department of Transportation; (g) Department of Justice; (h) Department of the Interior; (i) Department of Commerce; (j) Department of Energy; (k) Environmental Protection Agency; (l) Office of Management and Budget; (m) Office of Science and Technology Policy; (n) Office of the Deputy Assistant to the President for Environmental Policy; (o) Office of the Assistant to the President for Domestic Policy; (p) National Economic Council; (q) Council of Economic Advisers; and (r) such other Government officials as the President may designate. The Working Group shall report to the President through the Deputy Assistant to the President for Environmental Policy and the Assistant to the President for Domestic Policy.

(b) The Working Group shall: (1) provide guidance to Federal agencies on criteria for identifying disproportionately high and adverse human health or environmental effects on minority populations and low-income populations;

(2) coordinate with, provide guidance to, and serve as a clearinghouse for, each Federal agency as it develops an environmental justice strategy as required by section 1-103 of this order, in order to ensure that the administration, interpretation and enforcement of programs, activities and policies are undertaken in a consistent manner;

(3) assist in coordinating research by, and stimulating cooperation among, the Environmental Protection Agency, the Department of Health and Human Services, the Department of Housing and Urban Development, and other agencies conducting research or other activities in accordance with section 3-3 of this order;

(4) assist in coordinating data collection, required by this order;

(5) examine existing data and studies on environmental justice;

(6) hold public meetings as required in section 5-502(d) of this order; and

(7) develop interagency model projects on environmental justice that evidence cooperation among Federal agencies.

1-103. Development of Agency Strategies. (a) Except as provided in section 6-605 of this order, each Federal agency shall develop an agency-wide environmental justice strategy, as set forth in subsections (b)-(e) of this section that identifies and addresses disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations. The environmental justice strategy shall list programs, policies, planning and public participation processes, enforcement, and/or rulemakings related to human health or the environment that should be revised to, at a minimum: (1) promote enforcement of all health and environmental statutes in areas with minority populations and low-income populations; (2) ensure greater public participation; (3) improve research and data collection relating to the health of and environment of minority populations and low-income populations; and (4) identify differential patterns of consumption of natural resources among minority populations and low-income populations. In addition, the environmental justice strategy shall include, where appropriate, a timetable for undertaking identified revisions and consideration of economic and social implications of the revisions.

(b) Within 4 months of the date of this order, each Federal agency shall identify an internal administrative process for developing its environmental justice strategy, and shall inform the Working Group of the process.

(c) Within 6 months of the date of this order, each Federal agency shall provide the Working Group with an outline of its proposed environmental justice strategy.

(d) Within 10 months of the date of this order, each Federal agency shall provide the Working Group with its proposed environmental justice strategy.

(e) By March 24, 1995, each Federal agency shall finalize its environmental justice strategy and provide a copy and written description of its strategy to the Working Group. From the date of this order through March 24, 1995, each Federal agency, as part of its environmental justice strategy, shall identify several specific projects that can be promptly undertaken to address particular concerns identified during the development of the proposed environmental justice strategy, and a schedule for implementing those projects.

[§1-103(e) amended by E.O. 12948, 60 FR 6381, Feb. 1, 1995]

(f) Within 24 months of the date of this order, each Federal agency shall report to the Working Group on its progress in implementing its agency-wide environmental justice strategy.

(g) Federal agencies shall provide additional periodic reports to the Working Group as requested by the Working Group.

1-104. Reports to the President. Within 14 months of the date of this order, the Working Group shall submit to the President, through the Office of the Deputy Assistant to the President for Environmental Policy and the Office of the Assistant to the President for Domestic Policy, a report that describes the implementation of this order, and includes the final environmental justice strategies described in section 1-103(e) of this order.

Sec. 2-2. Federal Agency Responsibilities for Federal Programs.

Each Federal agency shall conduct its programs, policies, and activities that substantially affect human health or the environment, in a manner that ensures that such programs, policies, and activities do not have the effect of excluding persons (including populations) from participation in, denying persons (including populations) the benefits of, or subjecting persons (including populations) to discrimination under, such programs, policies, and activities, because of their race, color, or national origin.

Sec. 3-3. Research, Data Collection, and Analysis.

3-301. Human Health and Environmental Research and Analysis. (a) Environmental human health research, whenever practicable and appropriate, shall include diverse segments of the population in epidemiological and clinical studies, including segments at high risk from environmental hazards, such as minority populations, low-income populations and workers who may be exposed to substantial environmental hazards.

(b) Environmental human health analyses, whenever practicable and appropriate, shall identify multiple and cumulative exposures.

(c) Federal agencies shall provide minority populations and low-income populations the opportunity to comment on the development and design of research strategies undertaken pursuant to this order.

3-302. Human Health and Environmental Data Collection and Analysis. To the extent permitted by existing law, including the Privacy Act, as amended (5 U.S.C. section 552a): (a) each Federal agency, whenever practicable and appropriate, shall collect, maintain, and analyze information assessing and comparing environmental and human health risks borne by populations identified by race, national origin, or income. To the extent practical and appropriate, Federal agencies shall use this information to determine whether their programs, policies, and activities have disproportionately high and adverse human health or environmental effects on minority populations and low-income populations;

(b) In connection with the development and implementation of agency strategies in section 1-103 of this order, each Federal agency, whenever practicable and appropriate, shall collect, maintain and analyze information on the race, national origin, income level, and other readily accessible and appropriate information for areas surrounding facilities or sites expected to have a substantial environmental, human health, or economic effect on the surrounding populations, when such facilities or sites become the subject of substantial Federal environmental administrative or judicial action. Such information shall be made available to the public, unless prohibited by law; and

(c) Each Federal agency, whenever practicable and appropriate, shall collect, maintain, and analyze information on the race, national origin, income level, and other readily accessible and appropriate information for areas surrounding Federal facilities that are: (1) subject to the reporting requirements under the Emergency Planning and Community Right-to-Know Act, 42 U.S.C. section 11001-11050 as mandated in Executive Order No. 12856; and (2) expected to have a substantial environmental, human health, or economic effect on surrounding populations. Such information shall be made available to the public, unless prohibited by law.

(d) In carrying out the responsibilities in this section, each Federal agency, whenever practicable and appropriate, shall share information and eliminate unnecessary duplication of efforts through the use of existing data systems and cooperative agreements among Federal agencies and with State, local, and tribal governments.

Sec. 4-4. Subsistence Consumption of Fish and Wildlife.

4-401. Consumption Patterns. In order to assist in identifying the need for ensuring protection of populations with differential patterns of subsistence consumption of fish and wildlife, Federal agencies, whenever practicable and appropriate, shall collect, maintain, and analyze information on the consumption patterns of populations who principally rely on fish and/or wildlife for subsistence. Federal agencies shall communicate to the public the risks of those consumption patterns.

4-402. Guidance. Federal agencies, whenever practicable and appropriate, shall work in a coordinated manner to publish guidance reflecting the latest scientific information available concerning methods for evaluating the human health risks associated with the consumption of pollutant-bearing fish or wildlife. Agencies shall consider such guidance in developing their policies and rules.

Sec. 5-5. Public Participation and Access to Information.

(a) The public may submit recommendations to Federal agencies relating to the incorporation of environmental justice principles into Federal agency programs or policies. Each Federal agency shall convey such recommendations to the Working Group.

(b) Each Federal agency may, whenever practicable and appropriate, translate crucial public documents, notices, and hearings relating to human health or the environment for limited English speaking populations.

(c) Each Federal agency shall work to ensure that public documents, notices, and hearings relating to human health or the environment are concise, understandable, and readily accessible to the public.

(d) The Working Group shall hold public meetings, as appropriate, for the purpose of fact-finding, receiving public comments, and conducting inquiries concerning environmental justice. The Working Group shall prepare for public review a summary of the comments and recommendations discussed at the public meetings.

Sec. 6-6. General Provisions.

6-601. Responsibility for Agency Implementation. The head of each Federal agency shall be responsible for ensuring compliance with this order. Each Federal agency shall conduct internal reviews and take such other steps as may be necessary to monitor compliance with this order.

6-602. Executive Order No. 12250. This Executive order is intended to supplement but not supersede Executive Order No. 12250, which requires consistent and effective implementation of various laws prohibiting discriminatory practices in programs receiving Federal financial assistance. Nothing herein shall limit the effect or mandate of Executive Order No. 12250.

6-603. Executive Order No. 12875. This Executive order is not intended to limit the effect or mandate of Executive Order No. 12875.

6-604. Scope. For purposes of this order, Federal agency means any agency on the Working Group, and such other agencies as may be designated by the President, that conducts any Federal program or activity that substantially affects human health or the environment. Independent agencies are requested to comply with the provisions of this order.

6-605. Petitions for Exemptions. The head of a Federal agency may petition the President for an exemption from the requirements of this order on the grounds that all or some of the petitioning agency's programs or activities should not be subject to the requirements of this order.

6-606. Native American Programs. Each Federal agency responsibility set forth under this order shall apply equally to Native American programs. In addition, the Department of the Interior, in coordination with the Working Group, and, after consultation with tribal leaders, shall coordinate steps to be taken pursuant to this order that address Federally-recognized Indian Tribes.

6-607. Costs. Unless otherwise provided by law, Federal agencies shall assume the financial costs of complying with this order.

6-608. General. Federal agencies shall implement this order consistent with, and to the extent permitted by, existing law.

6-609. Judicial Review. This order is intended only to improve the internal management of the executive branch and is not intended to, nor does it create any right, benefit, or trust responsibility, substantive or procedural, enforceable at law or equity by a party against the United States, its agencies, its officers, or any person. This order shall not be construed to create any right to judicial review involving the compliance or noncompliance of the United States, its agencies, its officers, or any other person with this order.

/s/ William J. Clinton

THE WHITE HOUSE

February 11, 1994.

EXECUTIVE ORDER 13112

INVASIVE SPECIES

By the authority vested in me as President by the Constitution and the laws of the United States of America, including the National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321 et seq.), Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990, as amended (16 U.S.C. 4701 et seq.), Lacey Act, as amended (18 U.S.C. 42), Federal Plant Pest Act (7 U.S.C. 150aa et seq.), Federal Noxious Weed Act of 1974, as amended (7 U.S.C. 2801 et seq.), Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.), and other pertinent statutes, to prevent the introduction of invasive species and provide for their control and to minimize the economic, ecological, and human health impacts that invasive species cause, it is ordered as follows:

Section 1. Definitions.

(a) "Alien species" means, with respect to a particular ecosystem, any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem.

(b) "Control" means, as appropriate, eradicating, suppressing, reducing, or managing invasive species populations, preventing spread of invasive species from areas where they are present, and taking steps such as restoration of native species and habitats to reduce the effects of invasive species and to prevent further invasions.

(c) "Ecosystem" means the complex of a community of organisms and its environment.

(d) "Federal agency" means an executive department or agency, but does not include independent establishments as defined by 5 U.S.C. 104.

(e) "Introduction" means the intentional or unintentional escape, release, dissemination, or placement of a species into an ecosystem as a result of human activity.

(f) "Invasive species" means an alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health.

(g) "Native species" means, with respect to a particular ecosystem, a species that, other than as a result of an introduction, historically occurred or currently occurs in that ecosystem.

(h) "Species" means a group of organisms all of which have a high degree of physical and genetic similarity, generally interbreed only among themselves, and show persistent differences from members of allied groups of organisms.

(i) "Stakeholders" means, but is not limited to, State, tribal, and local government agencies, academic institutions, the scientific community, nongovernmental entities including environmental, agricultural, and conservation organizations, trade groups, commercial interests, and private landowners.

(j) "United States" means the 50 States, the District of Columbia, Puerto Rico, Guam, and all possessions, territories, and the territorial sea of the United States.

Sec. 2. Federal Agency Duties. (a) Each Federal agency whose actions may affect the status of invasive species shall, to the extent practicable and permitted by law,

(1) identify such actions;

(2) subject to the availability of appropriations, and within Administration budgetary limits, use relevant programs and authorities to: (i) prevent the introduction of invasive species; (ii) detect and respond rapidly to and control populations of such species in a cost-effective and environmentally sound manner; (iii) monitor invasive species populations accurately and reliably; (iv) provide for restoration of native species and habitat conditions in ecosystems that have been invaded; (v) conduct research on invasive species and develop technologies to prevent introduction and provide for environmentally sound control of invasive species; and (vi) promote public education on invasive species and the means to address them; and

(3) not authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species in the United States or elsewhere unless, pursuant to guidelines that it has prescribed, the agency has determined and made public its determination that the benefits of such actions clearly outweigh the potential harm caused by invasive species; and that all feasible and prudent measures to minimize risk of harm will be taken in conjunction with the actions.

(b) Federal agencies shall pursue the duties set forth in this section in consultation with the Invasive Species Council, consistent with the Invasive Species Management Plan and in cooperation with stakeholders, as appropriate, and, as approved by the Department of State, when Federal agencies are working with international organizations and foreign nations.

Sec. 3. Invasive Species Council. (a) An Invasive Species Council (Council) is hereby established whose members shall include the Secretary of State, the Secretary of the Treasury, the Secretary of Defense, the Secretary of the Interior, the Secretary of Agriculture, the Secretary of Commerce, the Secretary of Transportation, and the Administrator of the Environmental Protection Agency. The Council shall be Co-Chaired by the Secretary of the Interior, the Secretary of Agriculture, and the Secretary of Commerce. The Council may invite additional Federal agency representatives to be members, including representatives from subcabinet bureaus or offices with significant responsibilities concerning invasive species, and may prescribe special procedures for their participation. The Secretary of the Interior shall, with concurrence of the Co-Chairs, appoint an Executive Director of the Council and shall provide the staff and administrative support for the Council.

(b) The Secretary of the Interior shall establish an advisory committee under the Federal Advisory Committee Act, 5 U.S.C. App., to provide information and advice for consideration by the Council, and shall, after consultation with other members of the Council, appoint members of the advisory committee representing stakeholders. Among other things, the advisory committee shall recommend plans and actions at local, tribal, State, regional, and ecosystem-based levels to achieve the goals and objectives of the Management Plan in section 5 of this order. The advisory committee shall act in cooperation with stakeholders and existing organizations addressing invasive species. The Department of the Interior shall provide the administrative and financial support for the advisory committee.

Sec. 4. Duties of the Invasive Species Council. The Invasive Species Council shall provide national leadership regarding invasive species, and shall:

(a) oversee the implementation of this order and see that the Federal agency activities concerning invasive species are coordinated, complementary, cost-efficient, and effective, relying to the extent feasible and appropriate on existing organizations addressing invasive species, such as the Aquatic Nuisance Species Task Force, the Federal Interagency Committee for the Management of Noxious and Exotic Weeds, and the Committee on Environment and Natural Resources;

(b) encourage planning and action at local, tribal, State, regional, and ecosystem-based levels to achieve the goals and objectives of the Management Plan in section 5 of this order, in cooperation with stakeholders and existing organizations addressing invasive species;

(c) develop recommendations for international cooperation in addressing invasive species;

(d) develop, in consultation with the Council on Environmental Quality, guidance to Federal agencies pursuant to the National Environmental Policy Act on prevention and control of invasive species, including the procurement, use, and maintenance of native species as they affect invasive species;

(e) facilitate development of a coordinated network among Federal agencies to document, evaluate, and monitor impacts from invasive species on the economy, the environment, and human health;

(f) facilitate establishment of a coordinated, up-to-date information-sharing system that utilizes, to the greatest extent practicable, the Internet; this system shall facilitate access to and exchange of information concerning invasive species, including, but not limited to, information on distribution and abundance of invasive species; life histories of such species and invasive characteristics; economic, environmental, and human health impacts; management techniques, and laws and programs for management, research, and public education; and

(g) prepare and issue a national Invasive Species Management Plan as set forth in section 5 of this order.

Sec. 5. Invasive Species Management Plan. (a) Within 18 months after issuance of this order, the Council shall prepare and issue the first edition of a National Invasive Species Management Plan (Management Plan), which shall detail and recommend performance-oriented goals and objectives and specific measures of success for Federal agency efforts concerning invasive species. The Management Plan shall recommend specific objectives and measures for carrying out each of the Federal agency duties established in section 2(a) of this order and shall set forth steps to be taken by the Council to carry out the duties assigned to it under section 4 of this order. The Management Plan shall be developed through a public process and in consultation with Federal agencies and stakeholders.

(b) The first edition of the Management Plan shall include a review of existing and prospective approaches and authorities for preventing the introduction and spread of invasive species, including those for identifying pathways by which invasive species are introduced and for minimizing the risk of introductions via those pathways, and shall identify research needs and recommend measures to minimize the risk that introductions will occur. Such recommended measures shall provide for a science-based process to evaluate risks associated with introduction and spread of invasive species and a coordinated and systematic risk-based process to identify, monitor, and interdict pathways that may be involved in the introduction of invasive species. If recommended measures are not authorized by current law, the Council shall develop

and recommend to the President through its Co-Chairs legislative proposals for necessary changes in authority.

(c) The Council shall update the Management Plan biennially and shall concurrently evaluate and report on success in achieving the goals and objectives set forth in the Management Plan. The Management Plan shall identify the personnel, other resources, and additional levels of coordination needed to achieve the Management Plan's identified goals and objectives, and the Council shall provide each edition of the Management Plan and each report on it to the Office of Management and Budget. Within 18 months after measures have been recommended by the Council in any edition of the Management Plan, each Federal agency whose action is required to implement such measures shall either take the action recommended or shall provide the Council with an explanation of why the action is not feasible. The Council shall assess the effectiveness of this order no less than once each 5 years after the order is issued and shall report to the Office of Management and Budget on whether the order should be revised.

Sec. 6. Judicial Review and Administration. (a) This order is intended only to improve the internal management of the executive branch and is not intended to create any right, benefit, or trust responsibility, substantive or procedural, enforceable at law or equity by a party against the United States, its agencies, its officers, or any other person.

(b) Executive Order 11987 of May 24, 1977, is hereby revoked.

(c) The requirements of this order do not affect the obligations of Federal agencies under 16 U.S.C. 4713 with respect to ballast water programs.

(d) The requirements of section 2(a)(3) of this order shall not apply to any action of the Department of State or Department of Defense if the Secretary of State or the Secretary of Defense finds that exemption from such requirements is necessary for foreign policy or national security reasons.

WILLIAM J. CLINTON

THE WHITE HOUSE,
February 3, 1999.

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THE WHITE HOUSE

Office of the Press Secretary

For Immediate Release

April 21, 1997

EXECUTIVE ORDER

- - - - -

PROTECTION OF CHILDREN FROM ENVIRONMENTAL
HEALTH RISKS AND SAFETY RISKS

By the authority vested in me as President by the Constitution and the laws of the United States of America, it is hereby ordered as follows:

Section 1. Policy.

1-101. A growing body of scientific knowledge demonstrates that children may suffer disproportionately from environmental health risks and safety risks. These risks arise because: children's neurological, immunological, digestive, and other bodily systems are still developing; children eat more food, drink more fluids, and breathe more air in proportion to their body weight than adults; children's size and weight may diminish their protection from standard safety features; and children's behavior patterns may make them more susceptible to accidents because they are less able to protect themselves. Therefore, to the extent permitted by law and appropriate, and consistent with the agency's mission, each Federal agency:

- (a) shall make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children; and
- (b) shall ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks.

1-102. Each independent regulatory agency is encouraged to participate in the implementation of this order and comply with its provisions.

Sec. 2. Definitions. The following definitions shall apply to this order.

2-201. "Federal agency" means any authority of the United States that is an agency under 44 U.S.C. 3502(1) other than those considered to be independent regulatory agencies under 44 U.S.C. 3502(5). For purposes of this order, "military departments," as defined in 5 U.S.C. 102, are covered under the auspices of the Department of Defense.

2-202. "Covered regulatory action" means any substantive action in a rulemaking, initiated after the date of this order or for which a Notice of Proposed Rulemaking is published 1 year after the date of this order, that is likely to result in a rule that may:

- (a) be "economically significant" under Executive Order 12866 (a rulemaking that has an annual effect on the economy of \$100 million or more or would

adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities); and

- (b) concern an environmental health risk or safety risk that an agency has reason to believe may disproportionately affect children.

2-203. "Environmental health risks and safety risks" mean risks to health or to safety that are attributable to products or substances that the child is likely to come in contact with or ingest (such as the air we breathe, the food we eat, the water we drink or use for recreation, the soil we live on, and the products we use or are exposed to).

Sec. 3. Task Force on Environmental Health Risks and Safety Risks to Children.

3-301. There is hereby established the Task Force on Environmental Health Risks and Safety Risks to Children ("Task Force").

3-302. The Task Force will report to the President in consultation with the Domestic Policy Council, the National Science and Technology Council, the Council on Environmental Quality, and the Office of Management and Budget (OMB).

3-303. Membership. The Task Force shall be composed of the:

- (a) Secretary of Health and Human Services, who shall serve as a Co-Chair of the Council;
- (b) Administrator of the Environmental Protection Agency, who shall serve as a Co-Chair of the Council;
- (c) Secretary of Education;
- (d) Secretary of Labor;
- (e) Attorney General;
- (f) Secretary of Energy;
- (g) Secretary of Housing and Urban Development;
- (h) Secretary of Agriculture;
- (i) Secretary of Transportation;
- (j) Director of the Office of Management and Budget;
- (k) Chair of the Council on Environmental Quality;
- (l) Chair of the Consumer Product Safety Commission;
- (m) Assistant to the President for Economic Policy;
- (n) Assistant to the President for Domestic Policy;
- (o) Assistant to the President and Director of the Office of Science and Technology Policy;
- (p) Chair of the Council of Economic Advisers; and
- (q) Such other officials of executive departments and

agencies as the President may, from time to time, designate.

Members of the Task Force may delegate their responsibilities under this order to subordinates.

3-304. Functions. The Task Force shall recommend to the President Federal strategies for children's environmental health and safety, within the limits of the Administration's budget, to include the following elements:

- (a) statements of principles, general policy, and targeted annual priorities to guide the Federal approach to achieving the goals of this order;
- (b) a coordinated research agenda for the Federal Government, including steps to implement the review of research databases described in section 4 of this order;
- (c) recommendations for appropriate partnerships among Federal, State, local, and tribal governments and the private, academic, and nonprofit sectors;
- (d) proposals to enhance public outreach and communication to assist families in evaluating risks to children and in making informed consumer choices;
- (e) an identification of high-priority initiatives that the Federal Government has undertaken or will undertake in advancing protection of children's environmental health and safety; and
- (f) a statement regarding the desirability of new legislation to fulfill or promote the purposes of this order.

3-305. The Task Force shall prepare a biennial report on research, data, or other information that would enhance our ability to understand, analyze, and respond to environmental health risks and safety risks to children. For purposes of this report, cabinet agencies and other agencies identified by the Task Force shall identify and specifically describe for the Task Force key data needs related to environmental health risks and safety risks to children that have arisen in the course of the agency's programs and activities. The Task Force shall incorporate agency submissions into its report and ensure that this report is publicly available and widely disseminated. The Office of Science and Technology Policy and the National Science and Technology Council shall ensure that this report is fully considered in establishing research priorities.

3-306. The Task Force shall exist for a period of 4 years from the first meeting. At least 6 months prior to the expiration of that period, the member agencies shall assess the need for continuation of the Task Force or its functions, and make appropriate recommendations to the President.

Sec. 4. Research Coordination and Integration.

4-401. Within 6 months of the date of this order, the Task Force shall develop or direct to be developed a review of existing and planned data resources and a proposed plan for ensuring that researchers and Federal research agencies have access to information on all research conducted or funded by the Federal Government that is related to adverse health risks in children resulting from exposure to environmental health risks or safety risks. The National Science and Technology

Council shall review the plan.

4-402. The plan shall promote the sharing of information on academic and private research. It shall include recommendations to encourage that such data, to the extent permitted by law, is available to the public, the scientific and academic communities, and all Federal agencies.

Sec. 5. Agency Environmental Health Risk or Safety Risk Regulations.

5-501. For each covered regulatory action submitted to OMB's Office of Information and Regulatory Affairs (OIRA) for review pursuant to Executive Order 12866, the issuing agency shall provide to OIRA the following information developed as part of the agency's decisionmaking process, unless prohibited by law:

- (a) an evaluation of the environmental health or safety effects of the planned regulation on children; and
- (b) an explanation of why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the agency.

5-502. In emergency situations, or when an agency is obligated by law to act more quickly than normal review procedures allow, the agency shall comply with the provisions of this section to the extent practicable. For those covered regulatory actions that are governed by a court-imposed or statutory deadline, the agency shall, to the extent practicable, schedule any rulemaking proceedings so as to permit sufficient time for completing the analysis required by this section.

5-503. The analysis required by this section may be included as part of any other required analysis, and shall be made part of the administrative record for the covered regulatory action or otherwise made available to the public, to the extent permitted by law.

Sec. 6. Interagency Forum on Child and Family Statistics.

6-601. The Director of the OMB ("Director") shall convene an Interagency Forum on Child and Family Statistics ("Forum"), which will include representatives from the appropriate Federal statistics and research agencies. The Forum shall produce an annual compendium ("Report") of the most important indicators of the well-being of the Nation's children.

6-602. The Forum shall determine the indicators to be included in each Report and identify the sources of data to be used for each indicator. The Forum shall provide an ongoing review of Federal collection and dissemination of data on children and families, and shall make recommendations to improve the coverage and coordination of data collection and to reduce duplication and overlap.

6-603. The Report shall be published by the Forum in collaboration with the National Institute of Child Health and Human Development. The Forum shall present the first annual Report to the President, through the Director, by July 31, 1997. The Report shall be submitted annually thereafter, using the most recently available data.

Sec. 7. General Provisions.

7-701. This order is intended only for internal management

of the executive branch. This order is not intended, and should not be construed to create, any right, benefit, or trust responsibility, substantive or procedural, enforceable at law or equity by a party against the United States, its agencies, its officers, or its employees. This order shall not be construed to create any right to judicial review involving the compliance or noncompliance with this order by the United States, its agencies, its officers, or any other person.

7-702. Executive Order 12606 of September 2, 1987 is revoked.

WILLIAM J. CLINTON

THE WHITE HOUSE,
April 21, 1997.

#

BROOKLINE CONSERVATION COMMISSION
NORFOLK COUNTY
TOWN OF BROOKLINE

Town of Brookline
Address 333 Washington Street
Brookline, MA 02146

Phone 617-730-2000
FAX 617-730-2054

Contact Tom Brady

Munilaw confirmed April 14, 1999

This town follows the state wetlands regulations and has no package of regulations or information that can be purchased from the commission.

BOSTON CONSERVATION COMMISSION POLICIES AND PROCEDURES
SUFFOLK COUNTY
TOWN OF BOSTON

POLICIES AND PROCEDURES FOR THE BOSTON CONSERVATION COMMISSION
(Ratified June 23, 1993)

Received by MuniLaw 4/22/99

GENERAL PROVISIONS

PURPOSE: These procedures shall govern the management of the Boston Conservation Commission (hereinafter "the Commission"). Under the Massachusetts Wetlands Protection Act M.G.L. c.131 s.40, The Commission reviews project proposals for their effect on wetland resources in Boston. The Commission guards the public interest in these resource areas and seeks to protect and preserve the open space and natural areas of the City.

OFFICE: The offices of the Commission shall be maintained at Boston City Hall during normal business hours on all days that the building is open to the public.

COUNSEL: Legal counsel to the Commission shall be as designated by the Corporation Counsel of the City of Boston.

MEMBERS, OFFICE, STAFF

MEMBERS: As provided in Section 1 of the enabling statute, City of Boston Code Ordinances, Title VII.

OFFICERS: A chair and vice-chair as designated by the Mayor.

ACTING OFFICERS: In the absence of the chair and vice chair, an acting Chair shall be elected by the members present and shall serve until the return of one of the elected officers or until the Mayor appoints a new Chair and vice-chair whichever event shall occur first.

DUTIES OF THE CHAIR: The principal duties of the Chair shall be as follows:

- a. supervise the activities of the Commission;
- b. preside at meetings of the Commission;
- c. perform such other duties and assume responsibilities as may be consistent with and in furtherance of the enabling statute, including representing the Commission before other public bodies; and
- d. delegate from time to time specific authority to other members, and staff.

DUTIES OF THE VICE-CHAIR: The principal duties of the Vice-Chair shall be, in the absence of the Chair, to perform all the duties and responsibilities of the Chair.

STAFF: Shall be designated by the Director of the Environment Department and shall be experienced in environmental issues and familiar with the mandate of the Conservation Commission.

Page

BOSTON CONSERVATION COMMISSION

Page 2

DUTIES OF THE STAFF: The principal duties of the Staff as related to the Commission shall include:

- a. to take tape recorded minutes of all meetings of the Commission;
- b. to maintain records of every determination of the Commission;
- c. to prepare all reports and publications of the Commission;
- d. to receive and process, on behalf of the Commission, all petitions, applications for permits and other official correspondence;
- e. to prepare agendas and notify all persons entitled to notice for all Commission meetings;
- f. to act as a liaison between the Commission and other agencies, departments, and organizations to which it must relate in the conduct of its affairs, including, but not limited to the City of Boston, the state, the federal government, and the private sector;
- g. to prepare and sign, on behalf of the Commission, such correspondence and to assume such responsibility as the Commission shall from time to time direct;
- h. to consult with applicants for Orders of Conditions prior to the hearing on the applications;
- i. to make recommendations for action by the Commission on applications;
- j. to conduct and sign enforcement orders as necessary for preservation of the interests of the Wetlands Protection Act or Commission Policies and Procedures.
- k. to provide members with agenda and related background information for all Commission hearings and meetings.
- l. to perform such duties as the Commission in consultation with the Director of the Environment Department may from time to time direct.
- m. to maintain contact on a weekly basis with the Chair, either in writing or by telephone to keep the Commission advised of the most recent developments.
- n. to develop policies of the Commission as the Commission in consultation with the Director of the Environment Department may from time to time direct.

MEETINGS

REGULAR MEETINGS: Regular meetings of the Commission shall be held on the first and third Wednesday of each month in Boston City Hall unless noticed otherwise, or at the direction of the Chair, at other locations convenient to the district area. Should there be insufficient applications to warrant a meeting, the Commission staff will ask applicants to postpone to the next meeting date so that a full agenda is heard.

BOSTON CONSERVATION COMMISSION

Page 3

EMERGENCY MEETINGS: Emergency meetings to deal with special matters which are a result of a sudden, generally unexpected occurrence or set of circumstances demanding immediate action may be called by the Chair or Vice-Chair and may proceed as soon as a quorum is present.

NOTICE: A Notice of every meeting, except in the case of emergency, shall be filed with the City Clerk and the notice or a copy thereof shall, at least forty-eight hours, including Saturdays but not Sundays and legal holidays, prior to such meeting, be publicly posted in the office of the clerk. If the Commission deems necessary the meeting notice will be published in a newspaper of citywide circulation at the expense of the applicant. Any member of the public requesting notification and providing an address for such notice shall similarly be informed of meetings. The applicant is required to submit a list of abutters of land abutting the project proposal for notification

purposes. The form and timing of such notice shall be consistent with the enabling statute, the Open Meeting Law, and the policies and procedures of the Commission.

EXECUTIVE SESSION: In accordance with the M.G.L. C.39, S.23, no executive session shall be held until the Commission has first convened in an open session for which notice has been given, a majority of the members have voted to go into executive session and entered into the minutes, the presiding officer has stated before the executive session if the Commission will reconvene after the executive session. Executive session may be held only for the purposes stipulated in M.G.L. C.39, S.23B.

PUBLIC HEARINGS:

NOTICE: The Commission shall hold public hearings as required in the statute and the Open Meeting Law.

The staff shall give five days notice of the hearing to:

- a. the members of the Commission;
- b. the City Clerk, the Mayor, the members of the City Department, director of the City of Boston Mayor's Office of Neighborhood Services and the counsel to the Commission;
- c. those requesting notice;
- d. publication in a newspaper of general circulation in the City of Boston;
- e. all persons materially affected by any application to be heard at the hearing, consisting of:

BOSTON CONSERVATION COMMISSION

Page 4

1. all persons listed on the application;
2. other property owners deemed affected by a member of the Commission or the Secretary;
3. abutters and others substantially affected; Project proponents shall submit evidence of notice to abutters or those known to have substantial interest in the requested permit. The staff shall provide notices for distribution to the applicant for this purpose.

FORM OF NOTICE: The notice of the public hearing shall contain the following:

- a. the date, time and place of the hearing;
- b. the name of the applicant, and a description of the proposed work; and
- c. a statement that the applications are available for public inspection at the office of the Commission.

CONDUCT OF HEARINGS: Applications will generally be heard in the order given in the agenda and will not be heard prior to the time indicated thereon. The Chair or other presiding Commissioner shall open the hearing. The applicant shall briefly describe their proposal. The Chair shall then recognize any public officials present. Any member of the public wishing to give testimony shall do so in the order in which they are recognized by the Commission. The Chair may at his or her discretion place a time limit on testimony and request testimony in writing within a reasonable period of time.

DECISIONS: As soon as may be convenient, but not later than twenty-one days following the date of the hearing of the application, the Commission shall issue a decision:

taken at each meeting, including executive sessions. The records of any executive session may remain secret as long as publication may defeat the lawful purposes of the executive session, but no longer.

BOSTON CONSERVATION COMMISSION

Page 6

MANNER OF VOTING: All votes of the Commission shall be taken in open session, excluding votes taken in executive sessions which shall be recorded roll call votes and shall become a part of the record of said executive sessions. A member may cast a vote in favor of or in opposition to a proposed action of the Commission. Abstentions shall also be allowed.

RECONSIDERATION: The Commission may reconsider its vote upon any action prior to signing or releasing an Order of Conditions or Determination of Applicability. A motion for reconsideration must be made by a member present and voting upon the original determination proposed for reconsideration.

APPLICATIONS:

It is the responsibility of applicants to submit materials in accordance with a reasonable schedule determined each six months be the Commission. Filing deadlines and hearing dates shall be available through the staff. Applications not submitted in compliance with the schedule, the enabling statute or these policies and procedures shall be deemed incomplete.

All applications and accompanying materials submitted as part of an application (maps, reports, etc.) shall be dated, signed and stamped by an appropriate professional. All submitted engineering plans shall be dated, signed and stamped by an engineer licensed by the Commonwealth of Massachusetts. The professional staff which has signed and/or stamped the submitted applications shall submit curriculum vitae.

ADVANCE REVIEW OF APPLICATIONS: Members of the Commission are encouraged to review applications and visit the sites before a public hearing on the applications. If however, Commissioners are unable to view the site, such an inability is reason for the continuance of a hearing. The Commission shall designate at the public hearing the members who shall view the site, as not all members will necessarily view all sites. Abutting property owners and all others receiving notice shall also be notified that applications are available for public inspection at the Environment Department Office.

VIOLATIONS

PROCEDURES: The staff and/or designated enforcement personnel shall notify in writing owners of record of the property and the persons causing a violation that they are in violation of the Wetlands Protection Act and if deemed necessary by the Commission are required to appear at the next Commission Meeting. The staff shall issue notices of violation to the owners of record and the person causing the violation, describing the violation, any immediate steps needed to rectify it, and the date of the hearing

BOSTON CONSERVATION COMMISSION

Page 7

at which the violation will be reviewed and any penalties issued by the Commission, in response to complaints received from:

- a. an Order of Conditions, subject to certain conditions;
- b. to take the application for an Order of Conditions under advisement with the understanding that a formal decision shall be conveyed to the applicant within a time as determined at the hearing or upon submittal of documentation required by the Commission;
- c. to reject the application, in which case the reasons for the action of the Commission will be set forth in writing to the applicant;
- d. to reject the application without prejudice on account of a lack of sufficient information; this action requires that a new application be resubmitted for a future hearing or that a signed extension form be filed to continue the review to a future meeting.

The Commission reserves the right due to complexity or uncertainty of a project to extend the public comment period.

BOSTON CONSERVATION COMMISSION

Page 5

PROCEDURES

QUORUM: The number of members required to constitute a quorum shall be a majority of the appointed members. In the event a quorum is not present, the meeting will be rescheduled in its entirety to the next designated meeting date. A quorum is necessary for the Commission to undertake any action.

VOTES REQUIRED FOR APPROVAL: A majority of the members present with a minimum of a quorum present shall constitute approval in all cases, except when voting for amendments to the policies and procedures of the Commission, for which a two-thirds majority vote of the Commission as appointed shall be required.

PROXIES: Voting by proxy shall not be allowed.

CONFLICTS OF INTEREST: Members are expected to be knowledgeable of the State Conflict of Interest Law, M.G.L. C. 268A. Any member who has a personal or business matter before the Commission which would affect impartial discharge of his or her responsibilities in accordance with M.G.L. C. 268A shall disclose and shall not participate in the discussion of the matter or in the voting of the Commission, staff, and City Clerk as soon as the conflict is known and at a minimum prior to the commencement of the hearing, and shall physically withdraw from the Commission while the matter is before the Commission. The minutes of the meeting shall state that the member has abstained from consideration of the matter.

ABSENCES: It is the responsibility of any member unable to attend a scheduled meeting to inform the staff no later than 24 hours in advance of the scheduled hearing date.

ADJOURNMENT AND CONTINUANCE: In the event that the absence or departure of members from a meeting will cause a lack of quorum, or that the business before the Commission cannot be completed at one sitting, the presiding officer may adjourn the meeting and subsequently reschedule. Motions for adjournment or continuance shall require concurrence of a numerical majority of members presenting and voting.

MINUTES: Minutes shall be kept by the Commission's staff and the meeting's proceedings tape recorded at every meeting of the Commission. The tapes are available for transcription for a fee which will be assessed to cover the cost of transcription & handling. The Commission shall maintain accurate records of its meetings, setting forth the date, time, place, members present or absent and action

Munilaw

- a. a member of the Commission or
- b. a member of the staff;
- c. the Inspectional Services Department of the City of Boston; and
- d. any person, if the violation is verified by a person listed in categories a, b, and c above.

The staff shall send the notice of violation by certified return receipt and first class mail or hand delivery upon receipt of the complaint. The staff may order work be halted. If the owner of record does not respond within the required time period of the notice, the staff shall send a second notice pointing out the intention of the Commission to transfer the case to the Corporation Counsel within five days if no response is received. If there is still no response from the owner or agent of the owner, the Secretary shall return the violation over to the Corporation Counsel for appropriate action to require conformance with the enabling statute.

RECORDS: The staff shall maintain a record of all notices of violation and shall periodically distribute summary of this record to the Commission at its meetings.

AMENDMENTS

FORM: Amendments to these policies and procedures shall be proposed in writing and shall be made available to all members of the Commission at such time as notice is given for the meeting at which they are to be considered. Proposed amendments shall be available for public review. Notice of proposals to amend the policies and procedures shall conform to the Notice procedures for public meeting sessions.

APPROVAL: Amendments to these policies and procedures may be considered at any regular or annual meeting of the Commission, and shall be approved with the provisions regarding votes required for approval and the approval of the Director of the Environment Department or its successor.

WETLANDS ORDINANCE

FORM: Proposed local wetlands ordinance shall be proposed in writing and shall be made available to all members of the Commission at such time as notice is given for the meeting at which they are to be considered. Proposed ordinances shall be available for public review. Notice of ordinances shall conform to the notice procedures for public meeting sessions.

BOSTON CONSERVATION COMMISSION

Page 8

APPROVAL: Ordinances may be considered at any regular or annual meeting of the Commission, and shall be approved with the provisions regarding votes required for approval and the approval of the Director of the Environment Department or its successor. Upon a vote of approval by the Commission, the proposed wetland ordinance shall be submitted to the Mayor and the City Council for review and approval.

SEVERABILITY

SEVERABILITY: The provisions of these rules and regulations are severable, and if any provisions shall be held invalid by any decision of any court of competent jurisdiction, such decision shall not impair or otherwise affect other provisions of these rules and regulations.

Commonwealth of Massachusetts
Executive Office of Environmental Affairs ■ MEPA
Office

NPC

For Office Use Only
Executive Office of Environmental Affairs

MEPA Analyst: Laura Rome
Phone: 617-626- 1030

Notice of Project Change

RECEIVED
SEP 23 1999

The information requested on this form must be completed to begin MEPA Review of a NPC in accordance with the provisions of the Massachusetts Environmental Policy Act and its implementing regulations (see 301 CMR 11.10(1)).

Project Name: Emerald Necklace Environmental Improvements Master Plan and Phase I Muddy River Flood Control, Water Quality, and Habitat Enhancement		EOEA #: 11865	
Street:			
Municipality: Boston & Brookline		Watershed: Muddy River; Charles River	
Universal Transverse Mercator Coordinates:		Latitude: N42-20-35 Longitude: W 71-05-40	
Status of project construction: 0 %complete			
Proponent: Boston Parks & Recreation Department			
Street: 1010 Massachusetts Avenue			
Municipality: Boston		State: MA	Zip Code: 02118
Name of Contact Person From Whom Copies of this NPC May Be Obtained: John Burckardt			
Firm/Agency: c/o Boston Parks & Recreation Department		Street: 1010 Massachusetts Avenue	
Municipality: Boston		State: MA	Zip Code: 02118
Phone: (617) 635-4505	Fax: (617) 635-3256	E-mail: jburckardt@ci.boston.ma.us	

In 25 words or less, what is the project change? The project change involves

Cutting, removal and planting of plant material adjacent to Agassiz Bridge over the Back Bay Fens (Muddy River) in Boston.

See full project change description beginning on page 4.

Date of ENF filing or publication in the Environmental Monitor: February 10, 1999

Was an EIR required? ☒ Yes ☐ No; if yes,
was a Draft EIR filed? ☐ Yes (Date:) ☒ No
was a Final EIR filed? ☐ Yes (Date:) ☒ No
was a Single EIR filed? ☐ Yes (Date:) ☒ No

Have other NPCs been filed? ☒ Yes (Date(s): 8/22/2001-Back Bay Yard Sewer Separation) ☐ No

If this is a NPC solely for lapse of time (see 301 CMR 11.10(2)) proceed directly to
"ATTACHMENTS & SIGNATURES" on page 7.

PERMITS / FINANCIAL ASSISTANCE / LAND TRANSFER

List or describe all new or modified state permits, financial assistance, or land transfers not
previously reviewed:

None.

Are you requesting a finding that this project change is insignificant? (see 301 CMR 11.10(6))
☒ Yes ☐ No; if yes, attach justification.

Under 301 CMR 11.10 (6)(a), this change impacts far less than 10% of the project area, which extends
from Wards Pond to the Charles River.

Under 301 CMR 11.10 (6)(b), this change will not generate further impacts. The work is in the Buffer
Zone of the Back Bay Fens (Muddy River). A portion of the work is also in the 25-foot River Front
Area. See Sheet No. 29 in Attachment 4 for wetland resource area delineations. The work to date and
the proposed work will not alter any Bordering Vegetated Wetlands. During the proposed regrading
and re-establishment of turf, siltation control (silt fence and hay bales) will be in place to protect the
river from siltation.

Paragraphs 301 CMR 11.10 (6)(c) through (g) are not applicable to this NPC.

Are you requesting that a Scope in a previously issued Certificate be rescinded?
☐ Yes ☒ No; if yes, attach the Certificate

Are you requesting a change to a Scope in a previously issued Certificate? ☐ Yes ☒ No; if
yes, attach Certificate and describe the change you are requesting:

Summary of Project Size & Environmental Impacts	Previously reviewed	Net Change	Currently Proposed
LAND			
Total site acreage		No change	
Acres of land altered		No change	
Acres of impervious area		No change	
Square feet of bordering vegetated wetlands alteration		No change	
Square feet of other wetland alteration		No change	
Acres of non-water dependent use of tidelands or waterways		No change	
STRUCTURES			
Gross square footage		N/A	
Number of housing units		N/A	
Maximum height (in feet)		N/A	
TRANSPORTATION			
Vehicle trips per day		N/A	
Parking spaces		N/A	
WATER/WASTEWATER			
Gallons/day (GPD) of water use		N/A	
GPD water withdrawal		N/A	
GPD wastewater generation/ treatment		N/A	
Length of water/sewer mains (in miles)		N/A	

Does the project change involve any new or modified:

1. conversion of public parkland or other Article 97 public natural resources to any purpose not in accordance with Article 97? ☐ Yes ☒ No

2. release of any conservation restriction, preservation restriction, agricultural preservation restriction, or watershed preservation restriction? ☐ Yes ☒ No

3. impacts on Estimated Habitat of Rare Species, Vernal Pools, Priority Sites of Rare Species, or Exemplary Natural Communities? ☐ Yes ☒ No

4. impact on any structure, site or district listed in the State Register of Historic Place or the inventory of Historic and Archaeological Assets of the Commonwealth?

☒ Yes ☐ No; if yes, does the project involve any demolition or destruction of any listed or inventoried historic or archaeological resources? ☐ Yes ☒ No

5. impact upon an Area of Critical Environmental Concern? ☐ Yes ☒ No

If you answered 'Yes' to any of these 5 questions, explain below:

#1-- The Emerald Necklace is a registered historic place.

PROJECT CHANGE DESCRIPTION (attach additional pages as necessary). The project change description should include:

(a) a brief description of the project as most recently reviewed

The Environmental Notification Plan (ENF), dated January 1999, described the proposal to rehabilitate the Emerald Necklace parklands and restore the Muddy river system as the initial phase of a long range Emerald Necklace Environmental Improvements Plan. This proposal is consistent with the Emerald Necklace Master Plan, as developed in 1990 and published by the Department of Environmental Management in 2001.

The Muddy River Restoration Project involves a multi-discipline approach to improving the river between Wards Pond and the Charles River. The five objectives of the project include providing flood control, improving water quality, enhancing aquatic/riparian habitat, historic preservation and implementing of Best Management Practices (BMPs). The proposed work includes dredging of the river and ponds, culvert capacity enhancements, removal of invasives along the riverbanks and waterway, mitigation and replacement plantings, source control and treatment control BMPs. This project will be further described in a Draft Environmental Impact Report, which is currently anticipated for submission in the fall of 2001.

(b) a description of material changes to the project as previously reviewed.

Note: The following description includes the elements of the work outlined in the letter of July 9, 2001 from the MEPA Office to the Boston Parks and Recreation Department.

1. Site at which work was done: Agassiz Road Bridge over Muddy River. See USGS Map (Attachment 4) and site plan (Attachment 3, Item c). The work was along the southwesterly shelf adjacent to the bridge and extending westerly along the footpath that leads from the bridge to the Veterans Memorial and the Kelleher Rose Garden.

2. Work which occurred: The work included:

- pruning of ornamental shrubs within 6 inches of ground to rejuvenate new vigorous vegetation;
- removal of invasive vegetation growing among the ornamental shrubs.
- pruning to remove entirely (including roots) a yew hedge (*taxus media densi formis*) along the pedestrian pathway between the ornamental flowering shrub bed and the entrance to the veterans memorial garden. The goal was to remove completely the yew hedge (which was not in keeping with the historic design of the park). The work was performed in response to residents who complained of the significant hazard to safety walking through this area at night.

This work was stopped prior to completion upon receipt of the notice from the Executive Office of Environmental Affairs.

3. Proposed new planting for the shelf and other proposed work:

- a) The proposed work for the southwest shelf includes: **See Attachment 3, Item c**
- Retain existing ornamental shrubs that have regrown after pruning.
 - Complete removal of yew hedge to the sign identifying the entrance to the veterans' memorial
 - Removal of stumps of yews that were cut back.

- Removal of roots of the yew hedge to the sign.
- Regrading, adding soil as necessary, and hydroseeding the area to a lawn area.
- Replanting shelf area with selected species from the 1988 planting plan (Attachment 4, Item e), such as viburnum and witch hazel). (approximately 40 1-gallon shrubs, as noted in Attachment 4, Item d).
- Plant bed maintenance including removal of invasive species, edging and mulching.
- Lawn maintenance.
- Installation of temporary erosion and sediment control devices (silt fence and hay bales).

The proposed work will be performed by a contractor hired by the Boston Parks & Recreation Department. (For scope, see Attachment 3, Item d) Bids have been obtained, but work has not begun. If possible, this work would proceed this fall.

- Additional planting on the southwest shelf may follow in a subsequent contract.

b) The proposed work for the other 3 shelves includes: **See Attachment 3, Item c**

- Pruning of ornamental shrubs within 6 inches of ground to rejuvenate new vigorous vegetation.
- Removal of invasive vegetation growing among the ornamental shrubs.
- Replanting additional ornamental shrubs and other plant materials (species and layout generally based on 1988 planting plan--Attachment 4, Item e) to augment lost plant materials.
- Plant bed maintenance including removal of invasive species, edging and mulching.
- Installation of temporary erosion and sediment control devices (silt fence and hay bales).

This proposed work may be performed by a contractor, by Boston Parks forces, or a combination. The work may be started this fall, if time and weather conditions permit, otherwise, next spring.

Note - Additional Future Planting: The proponent, as part of the Muddy River Restoration Project, intends to perform additional planting for bank stabilization, habitat enhancement, and wetland impacts mitigation in the vicinity of the work described in this NPC. This future planting will be more fully described in the Draft Environmental Impact Report (DEIR) that will be filed subsequently. Note that the plantings proposed in this NPC will be retained

4. Performance standards under which the proponent propose to carry out such work in the future:

Objectives of the performance standards: maintenance of rejuvenated plants and maintenance of replacement plants.

Maintenance to achieve these objectives would include weeding and mulching as described in the paragraph 5 below. However, if the aggressive growth of weeds and invasive plant material threatens to overwhelm the ornamental plantings and manual weeding alone cannot effectively remove the weeds and invasives, it may be necessary to engage a more aggressive approach of pruning to 6 inches to ensure a more thorough removal of weeds and invasives.

Proposed Review with MEPA Office: During the interim between the filing of this NPC and the point in time when the Muddy River Restoration Project's maintenance plan is in effect, the proponent proposes to meet with the MEPA office twice a year to discuss the upcoming maintenance program, specifically to clarify if proposed activities fall under the category of "routine maintenance" as defined by the MEPA regulations.

5. Proposed maintenance plan:

Note: The interim maintenance plan described below is an interim plan that will be in effect until completion of the Muddy River Restoration Project. The Muddy River Restoration Project will include its own maintenance plan, and the area included in this NPC will be covered by that maintenance plan. That plan will be submitted in the Draft Environmental Impact Report (DEIR). Upon completion of construction of the Muddy River Restoration Project, that maintenance plan will guide the subsequent maintenance of the area.

Interim Maintenance Plan:

The Boston Parks & Recreation Department will perform the following work after the maintenance period provided by the contractor:

Weeding: Weed shrub beds periodically during growing season to remove invasive plant material.

Mulching: Maintain mulch at 3-inch depth. Remove excess mulch before applying new mulch, so that the total mulch depth after application of new mulch is 3 inches.

Lawns: Mow grass to maintain 2-1/2 to 3 inch average blade height.

(c) the significance of the proposed changes, with specific reference to the factors listed 301 CMR 11.10(6), and

Under 301 CMR 11.10 (6)(a), this change impacts far less than 10% of the project area, which extends from Words Pond to the Charles River.

Under 301 CMR 11.10 (6)(b), this change will not generate further environmental impacts. Erosion and sedimentation controls (silt fence and hay bales) will be used to control sediment-laden runoff during the regrading and re-establishment of lawn areas.

Paragraphs 301 CMR 11.10 (6)(c) through (g) are not applicable to this NPC.

(d) measures that the project is taking to avoid damage to the environment or to minimize and mitigate unavoidable environmental impacts. If the change will involve modification of any previously issued Section 61 Finding, include a proposed modification of the Section 61 Finding (or it will be required in a Supplemental EIR).

The area of the work is included in the 100-foot Buffer Zone of the Back Bay Fens (Muddy River). A portion of the work is also in the 25-foot River Front Area. See Sheet No. 29 in Attachment 4 for wetland resource area delineations.

Erosion and sedimentation controls (silt fence and hay bales) will be used to control sediment-laden runoff during the regrading and re-establishment of lawn areas.

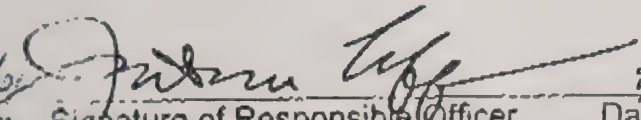
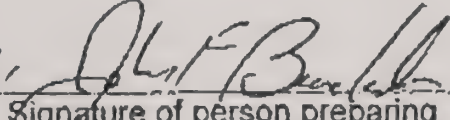
1. The Interim Maintenance Plan is in effect from the completion of the contract work on the southwesternly shelf until the maintenance plan for the Muddy River Restoration Project is in effect.

ATTACHMENTS & SIGNATURES

Attachments:

1. Secretary's most recent Certificate on this project
2. Plan showing most recent previously-reviewed proposed build condition
3. Plan showing currently proposed build condition
4. Original U.S.G.S. map or good quality color copy (8-1/2 x 11 inches or larger) indicating the project location and boundaries
5. List of all agencies and persons to whom the proponent circulated the NPC, in accordance with 301 CMR 11.10(7)

Signatures:

9/25/01		9/25/01	
Date	Signature of Responsible Officer of Proponent	Date	Signature of person preparing NPC (if different from above)

Justine M. Liff, Commissioner
Name (print or type)

John F. Burckardt, PE
Name (print or type)

Boston Parks & Recreation Dept.
Firm/Agency

Parsons Brinckerhoff Quade & Douglas, Inc.
Firm/Agency

1010 Massachusetts Avenue
Street

c/o Boston Parks & Recreation Dept.
1010 Massachusetts Avenue
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Boston, MA 02118
Municipality/State/Zip

Boston, MA 02118
Municipality/State/Zip

(617) 635-4505
Phone

(617) 635-4505
Phone



JANE SWIFT
GOVERNOR

BOB DUFRANO
SECRETARY

The Commonwealth of Massachusetts
Executive Office of Environmental Affairs
251 Causeway Street, Suite 900
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October 15, 2001

Tel: (617) 626-1000

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<http://www.nrc.net.state.ma.us/envir>

**CERTIFICATE OF THE SECRETARY OF ENVIRONMENTAL AFFAIRS
ON THE
NOTICE OF PROJECT CHANGE**

PROJECT NAME	:Emerald Necklace Environmental Improvements Master Plan and Phase I Muddy River Flood Control, Water Quality, and Habitat Enhancement
PROJECT MUNICIPALITY	:Boston and Brookline
PROJECT WATERSHED	:Charles River
EOEA NUMBER	:11865
PROJECT PROPONENT	:Boston Parks and Recreation Department and Brookline Department of Public Works

Pursuant to the Massachusetts Environmental Policy Act (M.G.L. c. 30, ss. 61-62H) and Section 11.10 of the MEPA regulations (301 CMR 11.00), I have reviewed the Notice of Project Change (NPC) submitted on this project and hereby determine that it does not require further environmental review.

The NPC involves cutting and removal of plant material at the Agassiz Bridge over the Muddy River, some of which work has already been completed, and planting of new material. The new plant material will be based on the 1988 planting plan. The NPC also describes an interim maintenance plan that would be in effect until the review of the maintenance plan in the Environmental Impact Report (EIR) is complete. I remind the proponent that this work may require review by the Boston Conservation Commission.

As it is described in the NPC, the proposed work seems to be generally appropriate. However, the NPC does not address either the removal of the trees from the bridge's masonry or the subsequent repair of the masonry. I expect that this work will be described in the Draft EIR and undertaken by the proponent prior to the installation of new plantings. Finally, I anticipate that the Department of Environmental Management, which paid for the original plantings on the bridge, will from time to time inspect the bridge to ensure that the interim management plan is effective.



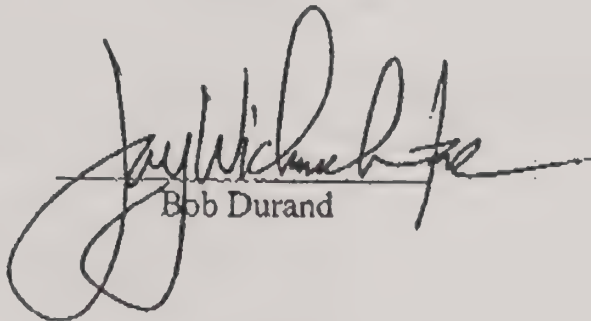
October 15, 2001

I understand that, as it determines what projects it will undertake, the Boston Parks and Recreation Department must consider the concerns of a wide range of constituencies. Nevertheless, I expect that future actions will be consistent with my April 29, 1999, Certificate on the Environmental Notification Form and with the *Emerald Necklace Parks Master Plan* (reissued April 2001).

I have reviewed the NPC and find that the changes described do not significantly increase the environmental impacts that are likely to result from the project. Based on review of the information provided by the proponent and others, I find that the potential impacts of this project do not warrant preparation of an Environmental Impact Report and can be addressed in the state and local permitting processes. No further MEPA review is required.

10/15/01

Date


Bob Durand

cc: Peter Webber, Commissioner, Department of Environmental Management
Boston Conservation Commission

Comments received: None

BD/LER/r

NPC

DRAFT

For Office Use Only
Executive Office of Environmental Affairs

MEPA Analyst: Laura Rome
Phone: 617-626- 1030

Notice of Project Change

The information requested on this form must be completed to begin MEPA Review of a NPC in accordance with the provisions of the Massachusetts Environmental Policy Act and its implementing regulations (see 301 CMR 11.10(1)).

Project Name: Emerald Necklace Environmental Improvements Master Plan and Phase I Muddy River Flood Control, Water Quality, and Habitat Enhancement		EOEA #: 11865	
Street:			
Municipality: Boston & Brookline		Watershed: Muddy River; Charles River	
Universal Transverse Mercator Coordinates:		Latitude: N42-20-35 Longitude: W 71-05-40	
Status of project construction: 0 %complete			
Proponent: Boston Parks & Recreation Department			
Street: 1010 Massachusetts Avenue			
Municipality: Boston		State: MA	Zip Code: 02118
Name of Contact Person From Whom Copies of this NPC May Be Obtained: John Burckardt			
Firm/Agency: Boston Parks & Recreation Department		Street: 1010 Massachusetts Avenue	
Municipality: Boston		State: MA	Zip Code: 02118
Phone: (617) 635-4505	Fax: (617) 635-3256	E-mail: jburckardt@ci.boston.ma.us	

In 25 words or less, what is the project change? The project change involves . . .

Cutting and removal of plant material adjacent to Agassiz Bridge over the Back Bay Fens (Muddy River) in Boston.

See full project change description beginning on page 3.

Date of ENF filing or publication in the Environmental Monitor: February 10, 1999

Was an EIR required? ☒Yes ☐No; if yes,
was a Draft EIR filed? ☐Yes (Date:) ☒No
was a Final EIR filed? ☐Yes (Date:) ☒No
was a Single EIR filed? ☐Yes (Date:) ☒No

Have other NPCs been filed? ☒Yes (Date(s): 8/22/2001-Back Bay Yard Sewer Separation) ☐No

If this is a NPC solely for lapse of time (see 301 CMR 11.10(2)) proceed directly to
"ATTACHMENTS & SIGNATURES" on page 4.

PERMITS / FINANCIAL ASSISTANCE / LAND TRANSFER

List or describe all new or modified state permits, financial assistance, or land transfers not
previously reviewed:

None.

Are you requesting a finding that this project change is insignificant? (see 301 CMR 11.10(6))
☒Yes ☐No; if yes, attach justification.

Under 301 CMR 11.10 (6)(a), this change impacts far less than 10% of the project area, which extends
from Wards Pond to the Charles River.

Under 301 CMR 11.10 (6)(b), this change will not generate further impacts. The work is in the Buffer
Zone of the Back Bay Fens (Muddy River). A portion of the work is also in the 25-foot River Front
Area. See Sheet No. 29 in Attachment 4 for wetland resource area delineations. The work to date and
the proposed work will not alter any Bordering Vegetated Wetlands. During the proposed regrading
and re-establishment of turf, siltation control (silt fence and hay bales) will be in place to protect the
river from siltation.

Paragraphs 301 CMR 11.10 (6)(c) through (g) are not applicable to this NPC.

Are you requesting that a Scope in a previously issued Certificate be rescinded?
☐Yes ☒No; if yes, attach the Certificate

Are you requesting a change to a Scope in a previously issued Certificate? ☐Yes ☒No; if
yes, attach Certificate and describe the change you are requesting:

Summary of Project Size & Environmental Impacts	Previously reviewed	Net Change	Currently Proposed
LAND			
Total site acreage		No change	
Acres of land altered		No change	
Acres of impervious area		No change	
Square feet of bordering vegetated wetlands alteration		No change	
Square feet of other wetland alteration		No change	
Acres of non-water dependent use of tidelands or waterways		No change	
STRUCTURES			
Gross square footage		N/A	
Number of housing units		N/A	
Maximum height (in feet)		N/A	
TRANSPORTATION			
Vehicle trips per day		N/A	
Parking spaces		N/A	
WATER/WASTEWATER			
Gallons/day (GPD) of water use		N/A	
GPD water withdrawal		N/A	
GPD wastewater generation/ treatment		N/A	
Length of water/sewer mains (in miles)		N/A	

Does the project change involve any new or modified:

1. conversion of public parkland or other Article 97 public natural resources to any purpose not in accordance with Article 97? ☐ Yes ☒ No

2. release of any conservation restriction, preservation restriction, agricultural preservation restriction, or watershed preservation restriction? ☐ Yes ☒ No

3. impacts on Estimated Habitat of Rare Species, Vernal Pools, Priority Sites of Rare Species, or Exemplary Natural Communities? ☐ Yes ☒ No

4. impact on any structure, site or district listed in the State Register of Historic Place or the inventory of Historic and Archaeological Assets of the Commonwealth?

☒ Yes ☐ No; if yes, does the project involve any demolition or destruction of any listed or inventoried historic or archaeological resources? ☐ Yes ☒ No

5. impact upon an Area of Critical Environmental Concern? ☐ Yes ☒ No

If you answered 'Yes' to any of these 5 questions, explain below:

#4--The Emerald Necklace is a registered historic place.

PROJECT CHANGE DESCRIPTION (attach additional pages as necessary). The project change description should include:

(a) a brief description of the project as most recently reviewed

The Environmental Notification Plan (ENF), dated January 1999, described the proposal to rehabilitate the Emerald Necklace parklands and restore the Muddy river system as the initial phase of a long range Emerald Necklace Environmental Improvements Plan. This proposal is consistent with the Emerald Necklace Master Plan, as developed in 1990 and published by the Department of Environmental Management in 2001.

The Muddy River Restoration Project involves a multi-discipline approach to improving the river between Wards Pond and the Charles River. The five objectives of the project include providing flood control, improving water quality, enhancing aquatic/riparian habitat, historic preservation and implementing of Best Management Practices (BMPs). The proposed work includes dredging of the river and ponds, culvert capacity enhancements, removal of invasives along the riverbanks and waterway, mitigation and replacement plantings, source control and treatment control BMPs. This project will be further described in a Draft Environmental Impact Report, which is currently anticipated for submission in the fall of 2001.

(b) a description of material changes to the project as previously reviewed,

Note: The following description includes the elements of the work outlined in the letter of July 9, 2001 from the MEPA Office to the Boston Parks and Recreation Department.

Site at which work was done: Agassiz Road Bridge over Muddy River. See USGS Map (Attachment 4) and site plan (Attachment 3). The work was along the southwesterly shelf adjacent to the bridge and extending westerly along the footpath that leads from the bridge to the Veterans Memorial and the Kelleher Rose Garden.

Work which occurred: The work included:

- pruning of ornamental shrubs within 6 inches of ground to rejuvenate new vigorous vegetation.
- pruning to remove entirely (including roots) a yew hedge (*taxus media densi formis*) along the pedestrian pathway between the ornamental flowering shrub bed and the entrance to the veterans memorial garden. The goal was to remove completely the yew hedge (which was not in keeping with the historic design of the park). The work was performed in response to residents who complained of the significant hazard to safety walking through this area at night.

This work was stopped prior to completion upon receipt of the notice from the Executive Office of Environmental Affairs.

Proposed new planting for the shelf and other proposed work:

The proposed work includes:

- Complete removal of yew hedge to the sign identifying the entrance to the veterans memorial.
- Removal of stumps of yews that were cut back.
- Removal of roots of the yew hedge to the sign.
- Regrading, adding soil as necessary, and hydroseeding the area to a lawn area.
- Replanting viburnum and witch hazel (approximately 40 1-gallon shrubs).

- Plant bed maintenance including removal of invasive species, edging and mulching.
- Lawn maintenance.
- Installation of temporary erosion and sediment control devices (silt fence and hay bales).

The proposed work will be performed by a contractor hired by the Boston Parks & Recreation Department. Bids have been obtained, but work has not begun.

Note: The proponent, as part of the Muddy River Restoration Project, intends to perform additional planting for bank stabilization, habitat enhancement, and wetland impacts mitigation in the vicinity of the work described in this NPC. This future planting will be more fully described in the Draft Environmental Impact Report (DEIR) that will be filed subsequently. Note that the plantings proposed in this NPC will be retained

Performance standards under which the proponent propose to carry out such work in the future:

Objectives of standards: maintenance of rejuvenated plants and maintenance of replacement plants.

Proposed maintenance plan:

Note: The interim maintenance plan described below is an interim plan until completion of the Muddy River Restoration Project. The Muddy River Restoration Project will include its own maintenance plan that will include the area described in this NPC. That plan be submitted in the Draft Environmental Impact Report (DEIR). Upon completion of construction of the Muddy River Restoration Project, that maintenance plan will guide the subsequent maintenance of the area.

Interim Maintenance Plan:

The Boston Parks & Recreation Department will perform the following work after the maintenance period provided by the contractor:

Weeding: Weed shrub beds periodically to remove invasive plant material.

Mulching: Maintain mulch at 3-inch depth. Remove excess mulch before applying new mulch, so that the total mulch depth after application of new mulch is 3 inches.

Lawns: Mow grass to maintain 2-1/2 to 3 inch average blade height.

(c) the significance of the proposed changes, with specific reference to the factors listed 301 CMR 11.10(6), and

Under 301 CMR 11.10 (6)(a), this change impacts far less than 10% of the project area, which extends from Wards Pond to the Charles River.

Under 301 CMR 11.10 (6)(b), this change will not generate further environmental impacts. Erosion and sedimentation controls (silt fence and hay bales) will be used to control sediment-laden runoff during the regrading and re-establishment of lawn areas.

Paragraphs 301 CMR 11.10 (6)(c) through (g) are not applicable to this NPC.

(d) measures that the project is taking to avoid damage to the environment or to minimize and mitigate unavoidable environmental impacts. If the change will involve modification of any previously issued Section 61 Finding, include a proposed modification of the Section 61 Finding (or it will be required in a Supplemental EIR).

The area of the work is include in the 100-foot Buffer Zone of the Back Bay Fens (Muddy River). A portion of the work is also in the 25-foot River Front Area. See Sheet No. 29 in Attachment 4 for wetland resource area delineations.

Erosion and sedimentation controls (silt fence and hay bales) will be used to control sediment-laden runoff during the regrading and re-establishment of lawn areas.

ATTACHMENTS & SIGNATURES

Attachments:

1. Secretary's most recent Certificate on this project
2. Plan showing most recent previously-reviewed proposed build condition
3. Plan showing currently proposed build condition
4. Original U.S.G.S. map or good quality color copy (8-1/2 x 11 inches or larger) indicating the project location and boundaries
5. List of all agencies and persons to whom the proponent circulated the NPC, in accordance with 301 CMR 11.10(7)

Signatures:

Date	Signature of Responsible Officer or Proponent	Date	Signature of person preparing NPC (if different from above)
	Justine M. Liff, Commissioner		John F. Burckardt, PE
	Name (print or type)		Name (print or type)
	Boston Parks & Recreation Dept.		Parsons Brinckerhoff Quade & Douglas, Inc.
	Firm/Agency		Firm/Agency
	1010 Massachusetts Avenue		c/o Boston Parks & Recreation Dept.
	Street		1010 Massachusetts Avenue
	Boston, MA 02118		Boston, MA 02118
	Municipality/State/Zip		Municipality/State/Zip
	(617) 635-4505		(617) 635-4505
	Phone		Phone

Attachment 1: Secretary's Certificates

- Certificate of the Secretary of Environmental Affairs on the Environmental Notification Form
- Certificate of the Secretary of Environmental Affairs Establishing A Special Review Procedure, April 29, 1999.



The Commonwealth of Massachusetts
Executive Office of Environmental Affairs
251 Causeway Street, Suite 900
Boston, MA 02114-2119

JANE SWIFT
GOVERNOR

BOB DURAND
SECRETARY

September 21, 2001

Tel. (617) 626-1000

Fax (617) 626-1181

<http://www.magnet.state.ma.us/envir>

CERTIFICATE OF THE SECRETARY OF ENVIRONMENTAL AFFAIRS
ON THE
NOTICE OF PROJECT CHANGE

PROJECT NAME	:Emerald Necklace Environmental Improvements Master Plan and Phase I Muddy River Flood Control, Water Quality, and Habitat Enhancement
PROJECT MUNICIPALITY	:Boston & Brookline
PROJECT WATERSHED	:Charles River
EOEA NUMBER	:11865
PROJECT PROPONENT	:Boston Parks and Recreation Department and Brookline Department of Public Works
DATE NOTICED IN MONITOR	:August 22, 2001

Pursuant to the Massachusetts Environmental Policy Act (M.G.L. c. 30, ss. 61-62H) and Section 11.10 of the MEPA regulations (301 CMR 11.00), I have reviewed the Notice of Project Change (NPC) submitted on this project and hereby determine that it **does not require** further environmental review.

As described in the Environmental Notification Form (ENF), the project involves a range of physical improvements and management practices that will produce flood control, water quality improvements, habitat enhancement, landscape restoration, pedestrian and automobile circulation improvements, and building and bridge restoration along the Muddy River and throughout the Emerald Necklace parks in Boston and Brookline.

According to the Notice of Project Change, the project change involves separation of the combined sanitary/storm sewer to a separate storm drain and sanitary sewer system at the Boston Park and Recreation Department's Back Bay Yard (near Park Drive and The Riverway). The purposes of the project are to (a) reduce inflow and infiltration to the combined sewer system; (b) eliminate potential health risks associated with the combined



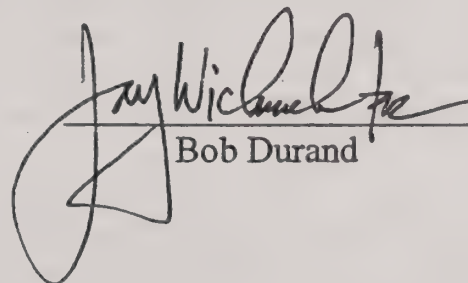
system, including risks associated with sewage surcharges causing backups into buildings and occurring during significant rainfall events; and (c) provide a new stormwater collection system at the site, including new deep sump hood catch basins, manholes, 300 linear feet of pipe, and infiltration chambers for groundwater recharge. There will be an overflow discharge to the Muddy River. The separation project will also reduce the volume of wastewater to be treated.

As requested by the Department of Environmental Protection and the Boston Water and Sewer Commission (BWSC), the proponent should provide its plans for the project to BWSC for its review and approval when the design is 50 percent complete. The plans should specifically address the potential impacts of releases from vehicles parked in the Back Bay Yard. I expect the proponent will also develop and implement an appropriate monitoring protocol, and that BWSC will have the opportunity to review it prior to its implementation.

I have reviewed the NPC and find that the changes described do not significantly increase the environmental impacts that are likely to result from the project. Based on review of the information provided by the proponent and others, I find that the potential impacts of this project do not warrant preparation of an Environmental Impact Report and can be addressed in the state and local permitting processes. No further MEPA review is required.

9/21/01

Date



Bob Durand

Comments received:

9/5/01	Boston Redevelopment Authority
9/11/01	Department of Environmental Protection
9/11/01	Boston Water and Sewer Commission
9/12/01	City of Boston, The Environment Department

BD/LER/lr

Boston Redevelopment Authority

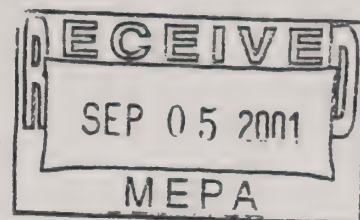
Boston's Planning & Economic
Development Office

Thomas M. Menino, Mayor
Clarence J. Jones, Chairman
Mark Maloney, Director

One City Hall Square
Boston, MA 02201-1007
Tel 617-722-4300
Fax 617-248-1937

Robert Durand, Secretary
Executive Office of Environmental Affairs
251 Causeway Street, 9th Floor
Boston, MA 02114-2150

SEP 4 2001



Attention: MEPA Unit

RE: EOE #11865 – Emerald Necklace Environmental Improvements Master Plan and
Phase I Muddy River Flood Control, Water Quality, and Habitat Enhancement
(Notice of Project Change)

Dear Secretary Durand:

Pursuant to regulations implementing M.G.L., Chapter 30, Sections 62-62H, the Boston Redevelopment Authority (BRA) has reviewed the above-referenced Notice of Project Change and submits the following comments.

The proposed project change involves a proposal to separate the existing combined sewer system at the Boston Parks and Recreation Department's Back Bay Yard near Park Drive and the Riverway to a separate storm drain and sanitary sewer system. The purposes of this improvement are to reduce infiltration and inflow into the combined sewer system, to eliminate potential health risks associated with the combined system (including surcharging resulting in sewage backup during significant rainfall events), and to provide stormwater management controls at the project site. Although this change will add a new discharge to the Muddy River, source and treatment controls Best Management Practices, including deep sump hooded catch basins to trap sediments and infiltration chambers to allow for groundwater recharge, will be included to protect the river, consistent with the objectives of the Muddy River Restoration Project. In addition, this separation work will reduce stormwater discharge to the sanitary sewer system.

Based on the information contained in the Notice of Project Change, we do not believe that the proposed improvement will result in any adverse impact but rather will serve to reduce impacts to the Muddy River and is entirely consistent with the objectives of the Emerald Necklace Environmental Improvements Master Plan and the Muddy River Restoration Project element of the Plan. We note that the Draft Environmental Impact Report (DEIR) for this project is still in preparation and is currently expected to be submitted in the fall of this year. We believe that no additional environmental review would be necessary because of the proposed change; however, it should be included and its benefits described in the DEIR.

Sincerely,

A handwritten signature in dark ink, appearing to read "Richard B. Mertens".

Richard B. Mertens, AICP
Environmental Review Officer

cc: Justine Liff, Commissioner
Boston Parks and Recreation Department

MERTENS/EmeraldN.doc



COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
ONE WINTER STREET, BOSTON, MA 02108 617-292-5500

LR

JANE SWIFT
Governor

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BOB DURAND
Secretary

LAUREN A. LISS
Commissioner

September 11, 2001

Jay Wickersham, Director
MEPA Unit
Executive Office of Environmental Affairs
251 Causeway Street
Boston, MA 02116

Re: EOEA #11865
Notice of Project Change
Emerald Necklace Improvements
Master Plan and Phase I Muddy
River Flood Control, Water Quality
And Habitat Enhancement

Attention: Dave Shepardson

The Department of Environmental Protection (DEP) has reviewed a Notice of Project Change for the "Emerald Necklace Environmental Improvement Master Plan and Phase I Muddy River Flood Control, Water Quality, and Habitat Enhancement" project (EOEA #11865) and has the following comments.

Staff from DEP has discussed the NPC with John Burchardt (Boston Parks and Recreation Department) and John Sullivan Jr. (Chief Engineer, Boston Water and Sewer Commission). Based on DEP's review of the NPC and the discussions with Messrs. Burchardt and Sullivan, DEP supports the proposal which will include the disconnection of catch basins from the sewer system in the Boston Parks and Recreation Department property adjacent to Park Drive and construction of a new separate stormwater system to handle stormwater flows from this area. The new stormwater system will include the use of infiltration chambers and an overflow discharge to the Muddy River. The NPC indicates that deep sump and hooded catch basins will be used. Based on the discussion with Mr. Sullivan, it is DEP's understanding that the drainage area includes a fueling facility for Parks and Recreation vehicles and that BWSC will be requiring installation of an oil/water -particle separator downgradient of this drainage area, a requirement which DEP strongly supports. It is DEP's understanding that the existing 8-inch clay sewer which will continue to transport wastewater from the Parks and Recreation building to the municipal sewer system is proposed to remain in service and does not appear to

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DEP on the World Wide Web: <http://www.state.ma.us/dep>



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have significant infiltration. If during implementation of this project, this assumption of no significant infiltration is determined to not be valid, the clay sewer should either be replaced or repaired.

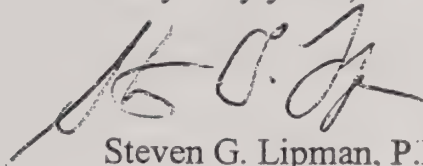
DEP respectfully requests that MEPA deem the NPC adequate and not require further MEPA review and allow the project to proceed into final design and permitting, subject to compliance with the following conditions.

Conditions

- (1) Plans for the proposed sewer/drain separation activities shall be provided to BWSC for review and approval.
- (2) Boston Parks and Recreation Department shall perform periodic monitoring and requisite maintenance of this system to ensure proper functioning of the catch basins, oil/water-particle separator, infiltration basins, and stormwater outfall structure.

Feel free to contact me (292-5698) if you have any questions regarding this correspondence.

Very truly yours,



Steven G. Lipman, P.E.
Special Projects Coordinator

SGL/wp
5b:11865NPC(2)

cc: John Burckardt, BP&RD
John Sullivan, Jr., BWSC
Richard Thibedeau, DEM
Yvonne Unger, Mike Stroman, Dave Shakespeare, Rachel Freed,
John Carrigan, DEP

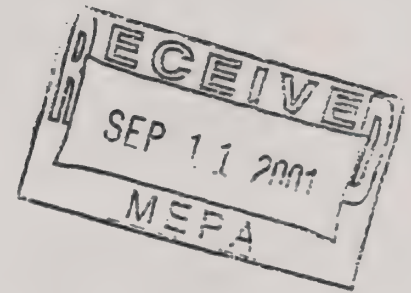
**Boston Water and
Sewer Commission**

980 Harrison Avenue
Boston, MA 02119
617-989-7000



September 6, 2001

Secretary Robert Durand
Executive Office of Environmental Affairs
Attention: MEPA Office
Laura Rome, EOEA #11865
251 Causeway Street
Boston, MA 02114



Re: Emerald Necklace Improvements/Back Bay Yard, Notice of Project Change

Dear Secretary Durand:

The Boston Water and Sewer Commission has reviewed the Notice of Project Change (NPC) for the above referenced project. The NPC consists of the separation of the combined sewer system at Back Bay Yard which is located near Park Drive and The Riverway in Boston. During significant rainfall events the combined sewer system has surcharged resulting in sewage backups through floor drains within the buildings on the property. Sewer separation will eliminate sewage backups into the buildings and it will reduce stormwater discharges to the combined sewer system, thereby reducing the quantity of wastewater that must be treated.

Separation will be achieved by constructing a new storm drain to direct stormwater runoff from the site to the Muddy River upstream of the culvert under the former Sears parking lot. Source and treatment control Best Management Practices (BMPs) will be included in the design of the new drain in order to protect river quality, consistent with the Muddy River Restoration Project. BMPs include deep sump hooded catch basins to trap sediments and infiltration chambers to allow for groundwater recharge.

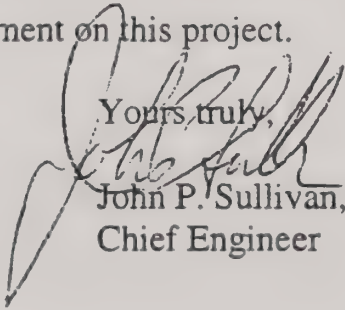
The Commission has the following comments concerning the proposed project:

1. The Back Bay Yard includes fueling facilities for Parks Department vehicles and storage for a variety of materials related to parks maintenance, some of which if spilled, may be hazardous or toxic. The construction of the new drain must include an appropriate containment device to prevent spills from discharging from the site to the Muddy River.

2. Prior to construction the proponent must submit a site plan and a General Service Application to the Commission for the new storm drain. The site plan should include the location and size of all water, sewer and drainage facilities currently serving the site, as well as the proposed location and size of the new storm drain.
3. The new drain must be designed and constructed at the proponent's expense in accordance with the Commission's Sewer Use Regulations and Requirements for Site Plans. To assure compliance with the Commission's requirements, the proponent should submit the site plan and General Service Application to the Commission for review and approval when the design of the development is 50 percent complete.
4. The Commission encourages the proponent to conduct dyed water testing of all sanitary sewer service connections and floor drains from the buildings on site to establish that they properly connected to the sewer system. Any sanitary or floor drain discharge to the Muddy River or other point of discharge other than a sanitary or combined sewer should be eliminated immediately by the proponent.
5. The Commission encourages the proponent to explore opportunities for minimizing impervious surfaces and for protecting stormwater quality on site by minimizing sanding and the use of deicing chemicals, pesticides and fertilizers.
6. The Commission requests that the proponent install permanent "Don't Dump" castings next to any new catch basin installed as part of this project. The Commission does not have castings specifically for the Muddy River. However, the Commission's castings for the Charles River may serve as an alternative, since the Muddy River ultimately discharges to the Charles River. Information regarding the purchase of the castings may be obtained by contacting the Commission's Operations Division.

Thank you for the opportunity to comment on this project.

Yours truly,


John P. Sullivan, P.E.
Chief Engineer

JPS/as

c: S. Ivan, Parks Dept.
J. Burckardt
M. Zlody, BED
R. Mertens, BRA



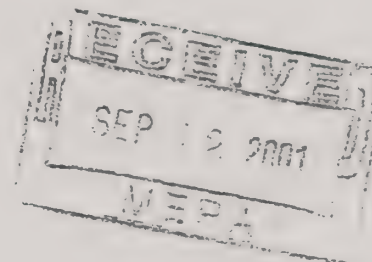
CITY OF BOSTON

THE ENVIRONMENT DEPARTMENT

Boston City Hall, Room 805 • Boston, MA 02201 • 617/635-3850 • FAX: 617/635-3435

September 12, 2001

Robert Durand, Secretary
Executive Office of Environmental Affairs
100 Cambridge Street, 20th Floor
Boston, MA 02202
Attention: Laura Rome, MEPA Office



Re: The Emerald Necklace Environmental Improvements Master Plan and Phase I Muddy River Flood Control, Water Quality and Habitat Enhancement - Notice of Project Change
EOEA #11865

Dear Secretary Durand:

The City of Boston has reviewed the Notice of Project Change (NPC) for the above referenced project and hereby submits the following comments.

PROJECT DESCRIPTION

The NPC describes an added element of the project previously submitted to MEPA in an Expanded Environmental Notification Form (EENF). A Draft Environmental Impact Report (DEIR) will be filed for the project. The proponent, the Boston Parks and Recreation Department (BPRD), is seeking a finding that the proposed change (additional project element) is insignificant as it impacts less than ten percent of the project area.

The proposed change is installation of new drain pipe and structures at Back Bay Yard, a location along the Muddy River just upstream of the culvert under the former Emerald Necklace "missing link" at Park Drive, Brookline Avenue and The Riverway. A new discharge will be added to the Muddy River.

The change is to include:

- separation of the existing combined sanitary sewer/stormwater system (CSO) to independent stormdrain pipes and sanitary sewer pipes;
- installation of deep sump hooded catch basins, manholes and about 300 linear feet of drain pipe;
- the use of infiltration chambers for groundwater recharge; and
- an overflow from infiltrators that will discharge what is described as treated stormwater to the Muddy River via the existing culvert and headwall.

The NPC concludes that this project element will reduce the overall flow of stormwater into the river. The change in the number of gallons per day (gpd) is not quantified.

RESPONSE

This department strongly supports the range environmental improvements proposed for the

BED Comments - Emerald Necklace Enviro. Improvements Master Plan/Phase I Muddy River
Flood Control, Water Quality & Habitat Enhancement NPC cont., EOE #11865
Page 2

Emerald Necklace. Steps to reduce storm-related flooding in the area of the Back Bay Fens and increase groundwater recharge are essential.

The Boston Water and Sewer Commission (BWSC) spends more than \$300,000 annually for the disposal of materials removed from catch basins. This cost does not include labor and general operating and maintenance costs. In addition, the quality of stormwater is receiving increasing regulatory attention as it is a primary contributor to the condition of receiving water bodies. We request that the proponent will help to educate the public and further improve the water quality of local water bodies by agreeing to the permanent installation of plaques at all storm drains that bear the warning "Don't Dump - Drains to Charles River." Further information on obtaining the casting for these plaques is available from the Engineering Division at the BWSC (617-989-7000).

Information not included in the NPC is the anticipated change in gpd of wastewater generation, an indication of how filtering through infiltration chambers will affect the quality of water to be discharged into the Muddy River and the number of annual discharges expected from the new outfall. We request that this information be provided in detail in the Notice of Intent that must be filed with the Boston Conservation Commission (BCC).

Thank you for the opportunity to offer comment. We look forward to the progress of this project.

Sincerely,



Antonia M. Pollak
Director

cc: Justine Liff, Commissioner, BPRD
Amy Schofield, BPRD

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